

# EAST Search History

- 10/786,372

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11	"6830833".pn. "6329086".pn. "6361887".pn. "6716371".pn. "6066712".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/03/26 15:13
L2	5	"6830833".pn. "6329086".pn. "6361887".pn. "6716371".pn. "6066712".pn.	USPAT	OR	ON	2007/03/26 15:32
L3	1	"2334959"	USPAT	OR	ON	2007/03/26 15:26
L4	8	"2334959"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/03/26 15:26
L5	0	"20020193551"	USPAT	OR	ON	2007/03/26 15:33
L6	2	"20020193551"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/03/26 16:12
L7	58	(amino and conjugat\$ and aryl and polymer).clm. and (428/690.ccls. or "313"/\$.ccls. or electrolumines\$ or electro-lumines\$ or OLED)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/03/26 16:14



# STIC Search Report

EIC 1700

STIC Database Tracking Number: 218413

**TO:** Dawn Garrett  
**Location:** Remsen 10c79  
Art Unit : 1774  
March 26, 2007  
**Phone:** 571-272-1523  
**Serial Number:** 10 / 786372

**From:** Jan Delaval  
**Location:** EIC 1700  
Remsen 4a30  
**Phone:** 571-272-2504  
**Email:** jan.delaval@uspto.gov

## Search Notes

Dawn -

Here are the results to your search request. Note that "CY" represents any cyclic group, open to any substitution, in the search query. I could not address the variables following the graphic structure of Claim 1 b), as this statement represent too many permutations, and the structure would not run to completion.

I left "X" as either a carbon chain or a ring, again, open.

There are 15 bibliographic citations, and 24 hit structures, which beat applicants' filing date.

The structure query is saved for 10 business days. Please contact me if you need more.

Jan

\*Need search results by 3/26 if possible.

Access DB# 218413

## SEARCH REQUEST FORM

### Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 3/16/2007  
Art Unit: 1774 Phone Number: 2-1523 Serial Number: 10/786,372  
Mail Box and Bldg/Room Location: REM TOC 79 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.  
\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_ ( See Bib. data sheet )  
Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers along with off appropriate serial number).

CIENTIFIC REFERENCE BR

SEARCHER'S OFFICE

MAR 16 REC'D

Pat. & T.M. Office

Please search the polymer of claim 1.

I already have searches wherein each

Ar is phenyl and wherein the Ar groups form  
Carbazole groups (as in claim 2).

Please search the remaining possibilities for the  
polymer.

Thank you.

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>Jan</u>	NA Sequence (#)	STN
Searcher Phone #:		AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	Questel/Orbit
Date Searcher Picked Up:	<u>3/26/07</u>	Bibliographic	Dr. Link
Date Completed:	<u>3/26/07</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:		Fulltext	Sequence Systems
Clerical Prep Time:	<u>20</u>	Patent Family	WWW/Internet
Online Time:	<u>+85</u>	Other	Other (specify)

=> fil reg  
FILE 'REGISTRY' ENTERED AT 09:16:34 ON 26 MAR 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2007 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 25 MAR 2007 HIGHEST RN 928121-90-8  
DICTIONARY FILE UPDATES: 25 MAR 2007 HIGHEST RN 928121-90-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

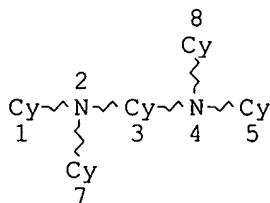
TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> d sta que 155  
L49 STR



NODE ATTRIBUTES:

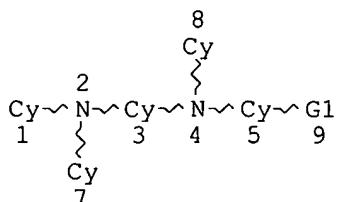
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L50 SCR 2043  
L52 759 SEA FILE=REGISTRY SSS FUL L49 AND L50  
L53 STR



VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
 L55 538 SEA FILE=REGISTRY SUB=L52 SSS FUL L53

100.0% PROCESSED 759 ITERATIONS 538 ANSWERS  
 SEARCH TIME: 00.00.01

=> d his

(FILE 'HOME' ENTERED AT 07:52:52 ON 26 MAR 2007)  
 DEL HIS

FILE 'HCAPLUS' ENTERED AT 07:54:40 ON 26 MAR 2007  
 L1 1 S US20050186444/PN OR US2004-786372#/AP, PRN  
     E ZHENG/AU  
 L2 1 S E3  
     E ZHENG NAME/AU  
     E ZHENG S/AU  
 L3 253 S E3-E23  
     E ZHENG SHI/AU  
 L4 15 S E3, E34  
     E ZHENG SHIYING/AU  
 L5 81 S E3  
     E SHI/AU  
 L6 1 S E3  
     E SHI NAME/AU  
 L7 6 S E4  
     E SHI Y/AU  
 L8 448 S E3, E27  
     E SHI YING/AU  
 L9 293 S E3  
     E SHIYING/AU  
     E SHI YINGZ/AU  
     E VAETH/AU  
 L10 33 S E18-E21  
     E PHAN/AU  
     E PHAN NAME/AU  
     E PHAN Q/AU  
 L11 22 S E3-E7, E10-E15  
     E QUANG/AU  
 L12 13 S E72-E74  
     E ELECTROLUMINESCEN/CT  
 L13 55101 S E4+OLD, NT OR E8+OLD, NT  
 L14 55052 S E8-E19  
     E E8+ALL  
 L15 213 S E19-E20  
     E E37+ALL  
 L16 12247 S E8, E9  
 L17 43 S L2-L12 AND L13-L16  
     E SEMICONDUCT/CT  
 L18 448015 S E44+OLD, NT OR E42+OLD, NT  
     E E42+ALL

L19 100 S L2-L12 AND L18  
   E LUMINESCENT/CT  
 L20 17443 S E14+OLD, NT OR E24+OLDNT OR E24-E32  
   E E24+ALL  
 L21 103 S L2-L12 AND L18-L20  
 L22 105 S L1,L17,L19,L21  
 L23 31 S L22 AND (POLYM? OR PLASTIC?)/SC,SX  
 L24 74 S L22 NOT L23  
   SEL RN L23

FILE 'REGISTRY' ENTERED AT 08:02:54 ON 26 MAR 2007  
 L25       674 S E1-E674

FILE 'HCAPLUS' ENTERED AT 08:03:53 ON 26 MAR 2007  
 L26       TRA L24 1- RN :       141 TERMS

FILE 'REGISTRY' ENTERED AT 08:03:55 ON 26 MAR 2007  
 L27       141 SEA L26  
 L28       781 S L25,L27  
 L29       173 S L28 AND N/ELS AND NR>=1  
 L30       47 S L29 NOT PMS/CI  
 L31       126 S L29 NOT L30  
 L32       65 S L31 AND 1/NC  
 L33       53 S L32 AND N>=2  
 L34       6 S L33 AND (C76H74N2O2 OR C56H56N2O2)  
 L35       61 S L31 NOT L32

FILE 'HCAPLUS' ENTERED AT 08:16:17 ON 26 MAR 2007  
 L36       TRA L1 1- RN :       14 TERMS

FILE 'REGISTRY' ENTERED AT 08:16:17 ON 26 MAR 2007  
 L37       14 SEA L36  
 L38       3 S L37 AND PMS/CI AND N/ELS  
 L39       7 S L34,L38  
 L40       130 S L28 AND IDS/CI  
 L41       65 S L40 AND N/ELS  
 L42       60 S L41 AND N>=2  
 L43       20 S L42 NOT CARBONYL  
 L44       9 S L43 AND ETHENEDIYL  
 L45       15 S L39,L44  
 L46       40 S L42 NOT L43

FILE 'HCAPLUS' ENTERED AT 08:23:52 ON 26 MAR 2007  
 L47       5 S L45  
 L48       5 S L47 AND L1-L12

FILE 'REGISTRY' ENTERED AT 08:24:17 ON 26 MAR 2007  
 L49       STR  
 L50       SCR 2043  
 L51       1 S L49 AND L50  
 L52       759 S L49 AND L50 FUL  
        SAV L52 DAWN786/A  
 L53       STR L49  
 L54       22 S L53 SAM SUB=L52  
 L55       538 S L53 FUL SUB=L52  
        SAV L55 DAWN786A/A  
 L56       247 S L55 AND 1/NC  
 L57       192 S L56 NOT (CARBONYL OR ACID)  
 L58       291 S L55 NOT L56

FILE 'HCAPLUS' ENTERED AT 08:39:38 ON 26 MAR 2007  
 L59        358 S L55  
 L60        69 S L59 AND PY<=2004 NOT P/DT  
 L61        177 S L59 AND (PD<=20040225 OR PRD<=20040225 OR AD<=20040225) AND P  
 L62        246 S L60, L61  
 L63        1 S L62 AND L1-L12  
 L64        1 S L62 AND (EASTMAN? OR KODAK?)/PA,CS  
 L65        1 S L63, L64  
 L66        2 S L48 AND PY<=2004 NOT P/DT  
 L67        3 S L48 AND (PD<=20040225 OR PRD<=20040225 OR AD<=20040225) AND P  
 L68        5 S L65-L67  
 L69        5 S L68 AND L13-L16, L18, L20  
 L70        122 S L62 AND L13-L16, L18, L20  
 L71        94 S L70 AND (POLYMER? OR PLASTIC?)/SC, SX  
 L72        28 S L70 NOT L71  
 SEL HIT RN L72

FILE 'REGISTRY' ENTERED AT 08:44:07 ON 26 MAR 2007

L73        40 S E675-E714  
 L74        20 S L73 AND NC>=2  
 L75        20 S L73 NOT L74  
 L76        2 S L75 AND (C62H42N2 OR C42H36N2)

FILE 'HCAPLUS' ENTERED AT 08:47:38 ON 26 MAR 2007

L77        2 S L76  
 SEL HIT RN L71

FILE 'REGISTRY' ENTERED AT 08:48:14 ON 26 MAR 2007

L78        171 S E715-E885  
 L79        90 S L78 AND NC>=2  
 L80        2 S L79 AND (C10H10 OR C12H14)  
 L81        81 S L78 NOT L79  
 L82        5 S L81 AND (C44H35N3 OR C34H31N3 OR C76H74N202 OR C44H40N2 OR C3

FILE 'HCAPLUS' ENTERED AT 09:03:01 ON 26 MAR 2007

L83        10 S L80 OR L82  
 L84        4 S L83 AND (PD<=20040225 OR PRD<=20040225 OR AD<=20040225) AND P  
 L85        4 S L83 AND PY<=2004 NOT P/DT  
 L86        14 S L69, L77, L84, L85  
 L87        124 S L62 NOT L71, L72, L86  
 SEL HIT RN  
 DEL SEL

FILE 'REGISTRY' ENTERED AT 09:04:28 ON 26 MAR 2007

L88        FILE 'HCAPLUS' ENTERED AT 09:04:28 ON 26 MAR 2007  
 TRA L87 1- RN : 1606 TERMS

FILE 'REGISTRY' ENTERED AT 09:04:30 ON 26 MAR 2007

L89        1606 SEA L88  
 L90        189 S L89 AND L55  
 L91        172 S L90 NOT L78  
 L92        79 S L91 AND NC>=2  
 L93        93 S L91 NOT L92  
 L94        1 S L93 AND C38H32N2

FILE 'HCAPLUS' ENTERED AT 09:13:39 ON 26 MAR 2007

L95        1 S L94  
 L96        15 S L86, L95  
 L97        6 S L96 AND PY<=2004 NOT P/DT

L98            9 S L96 AND (PD<=20040225 OR PRD<=20040225 OR AD<=20040225) AND P  
 L99            15 S L97, L98  
 L100          14 S L99 AND L13-L16, L18, L20  
 L101          14 S L99 AND (CATHOD? OR ANOD? OR BATTERY OR FUEL CELL OR ?ELECTR  
 L102          11 S L99 AND (POLYM? OR PLASTIC?)/SC, SX  
 L103          14 S L99 AND ELECTR?/SC, SX  
 L104          15 S L99-L103

FILE 'REGISTRY' ENTERED AT 09:16:34 ON 26 MAR 2007

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FILE COVERS 1907 - 26 Mar 2007 VOL 146 ISS 14  
 FILE LAST UPDATED: 25 Mar 2007 (20070325/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 1104 bib abs hitind hitstr retable tot

L104 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:904178 HCAPLUS  
 DN 143:256779  
 TI Electroluminescent devices having conjugated arylamine polymers  
 IN Zheng, Shiying; Vaeth, Kathleen M.; Phan,  
 Quang

PA Eastman Kodak Company, USA  
 SO U.S. Pat. Appl. Publ., 36 pp.  
 CODEN: USXXCO

DT Patent  
 LA English  
 FAN.CNT 1

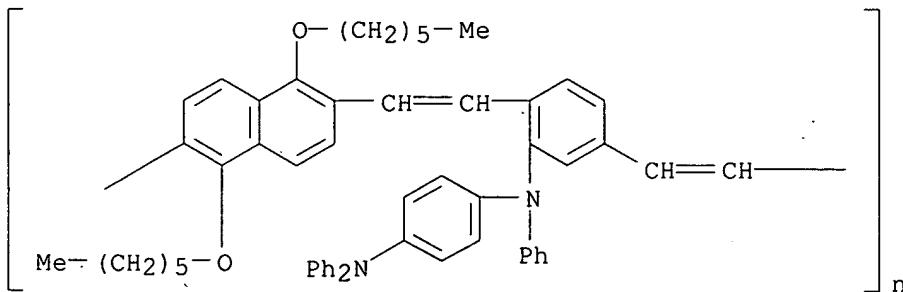
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005186444	A1	20050825	US 2004-786372	20040225 <-
PRAI US 2004-786372		20040225 <-		

AB Electroluminescent devices comprising a spaced-apart anode and cathode and an organic layer disposed between the anode and the cathode are described in which the organic layer includes a polymer having arylamine repeating unit moieties described by the general formula -Ar(B)-X- (B = -N(Ar3)-Ar4-N(Ar2)-Ar1; Ar and Ar1-4 = independently selected C6-60 aryl groups and/or C4-60 heteroaryl groups, or Ar1 and Ar2, Ar3 and Ar4, Ar1 and Ar4, Ar2 and Ar4

*current application*

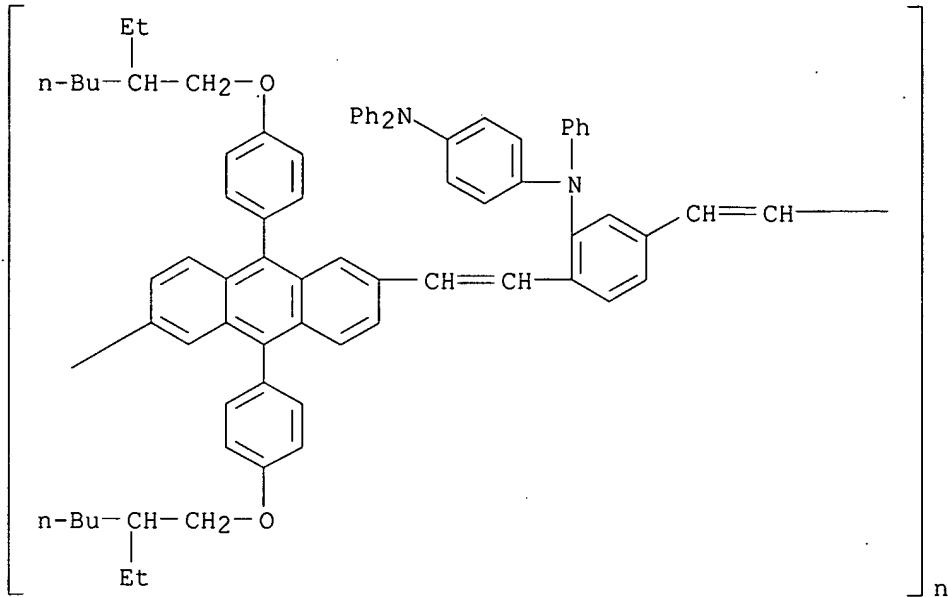
are bonded; and X = a C2-60 conjugated group). The arylamine polymer may be doped with  $\geq 1$  fluorescent dyes, phosphorescent dopants, or other light emitting material. Methods of fabricating the devices are also described which entail forming an organic layer including the arylamine polymers between the anode and the cathode.

- IC ICM H05B0033-12  
 INCL 428690000; 428917000; 313504000; 313506000; 257040000; 427066000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 76  
 ST electroluminescent device conjugated arylamine polymer  
 IT Luminescent substances  
     Semiconductor device fabrication  
     (electroluminescent devices using conjugated arylamine polymers and their fabrication)  
 IT Luminescent substances  
     (electroluminescent; electroluminescent devices using conjugated arylamine polymers and their fabrication)  
 IT Electroluminescent devices  
     (organic; electroluminescent devices using conjugated arylamine polymers and their fabrication)  
 IT 863127-71-3 863127-72-4 863309-01-7  
 RL: DEV (Device component use); USES (Uses)  
     (electroluminescent devices using conjugated arylamine polymers and their fabrication)  
 IT 62-53-3, Aniline, reactions 122-39-4, Diphenyl amine, reactions 624-38-4, 1,4-Diodobenzene 5372-81-6, Dimethyl 2-aminoterephthalate 10035-10-6, Hydrobromic acid, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
     (electroluminescent devices using conjugated arylamine polymers and their fabrication)  
 IT 18643-86-2P, Dimethyl 2-bromoterephthalate 38257-52-2P 566155-74-6P  
 863127-68-8P 863127-69-9P 863127-70-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
     (electroluminescent devices using conjugated arylamine polymers and their fabrication)  
 IT 863127-71-3 863127-72-4 863309-01-7  
 RL: DEV (Device component use); USES (Uses)  
     (electroluminescent devices using conjugated arylamine polymers and their fabrication)  
 RN 863127-71-3 HCPLUS  
 CN Poly[[1,5-bis(hexyloxy)-2,6-naphthalenediyl]-1,2-ethenediyl[2-[[4-(diphenylamino)phenyl]phenylamino]-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 863127-72-4 HCAPLUS

CN Poly[[9,10-bis[4-[(2-ethylhexyl)oxy]phenyl]-2,6-anthracenediyl]-1,2-ethenediyl[2-[4-(diphenylamino)phenyl]phenylamino]-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 863309-01-7 HCAPLUS

CN Poly[[[(3,7-dimethyloctyl)oxy]methoxy-1,4-phenylene]-1,2-ethenediyl[[[4-(diphenylamino)phenyl]phenylamino]-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L104 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:120165 HCAPLUS

DN 142:177801

TI Radically polymerizable compositions containing unsaturated phenylamine compounds and their cured products

IN Ota, Keisuke; Kai, Kazushi

PA Showa Denko K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 41 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005036223	A	20050210	JP 2004-196461	20040702 <--
PRAI	JP 2003-191166	A	20030703 <--		

AB The compns., useful for adhesives, coatings, and sealants with good thermosetting properties at low temps. (80-120°) without using polymerization initiators, contain polymerizable compds. bearing units NX (X = R1-5-substituted Ph; R1-5 = H, halo, alkyl, alkoxy, etc.; ≥1 of R1-5 = R6C:CR7R8; R6-8 = H, C1-4 alkyl). Thus, tris(4-vinylphenyl)amine was cured on a glass plate at 100° to give a tack-free film with pencil hardness 2B.

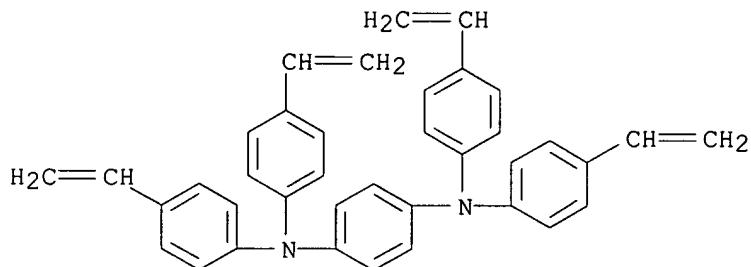
IC ICM C08F0246-00

ICS C08F0220-00; C08F0212-00  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 25  
 IT 443118-19-2P, Tris(4-vinylphenyl)amine homopolymer 835618-81-0P,  
 1,4-Bis[di(4-vinylphenyl)amino]benzene homopolymer 835618-85-4P  
 835618-86-5P 835618-87-6P 835618-88-7P 835618-89-8P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (radically polymerizable compns. containing unsatd. phenylamine compds.,  
 showing good thermosetting properties at relatively low temps.)  
 IT 835618-81-0P, 1,4-Bis[di(4-vinylphenyl)amino]benzene homopolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (radically polymerizable compns. containing unsatd. phenylamine compds.,  
 showing good thermosetting properties at relatively low temps.)  
 RN 835618-81-0 HCAPLUS  
 CN 1,4-Benzenediamine, N,N,N',N'-tetrakis(4-ethenylphenyl)-, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

CRN 835618-80-9

CMF C38 H32 N2



L104 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:451525 HCAPLUS

DN 141:30834

TI Organic light-emitting device based on crosslinkable spiro-type conjugated compounds

IN Li, Xiao-Chang Charles

PA Canon Kabushiki Kaisha, Japan

SO U.S. Pat. Appl. Publ., 13 pp.

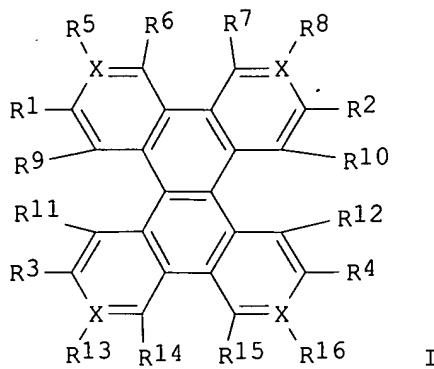
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004106004	A1	20040603	US 2002-308099	20021203 <--
	US 6830833	B2	20041214		
	CN 1505179	A	20040616	CN 2003-10118744	20031202 <--
	JP 2004182737	A	20040702	JP 2003-403748	20031202 <--
	JP 3880574	B2	20070214		
PRAI	US 2002-308099	A	20021203	<--	
OS	MARPAT 141:30834				
GI					



AB The title spiro-type conjugated compds. represented by general formula I ( $X = C, N$ ;  $R1-16 = H, D, \text{alkyl, alkoxy, silyl, aromatic ring, fused aromatic ring, heteroarom. ring, fused heteroarom. ring, diarylamino, carbazole; at least one of } R1-16 \text{ is crosslinkable group consisting of vinyl double bond or azide group}$ ) are useful in the fabrication of organic light emitting devices.

IC ICM H05B0033-14  
ICS C09K0011-06

INCL 428690000; 428917000; 313504000; 313506000; 546041000; 564426000;  
564429000; 556431000; 556432000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 24, 27, 28, 74

ST spiro conjugated compd crosslinkable polymer org light emitting device;  
org electroluminescent display OLED crosslinkable spiro conjugated polymer

IT Electroluminescent devices  
(displays; organic light-emitting device based on crosslinkable spiro-type conjugated compds.)

IT Luminescent screens  
Luminescent substances

(electroluminescent; organic light-emitting device based on crosslinkable spiro-type conjugated compds.)

IT 697763-40-9P

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)  
(crosslinked spiro-type conjugated compds. as hole transport materials for organic light-emitting device)

IT 697763-40-9P

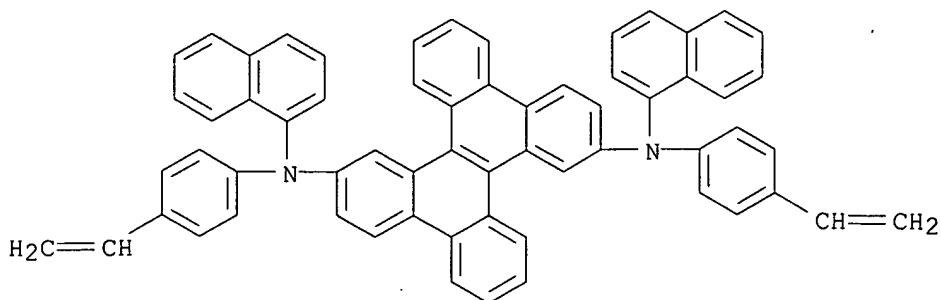
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)  
(crosslinked spiro-type conjugated compds. as hole transport materials for organic light-emitting device)

RN 697763-40-9 HCAPLUS

CN Dibenzo[g,p]chrysene-2,10-diamine, N,N'-bis(4-ethenylphenyl)-N,N'-di-1-naphthalenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 697763-39-6  
CMF C62 H42 N2



## RETABLE

Referenced Author (RAU)	Year (R PY)	VOL (R VL)	PG (R PG)	Referenced Work (RWK)	Referenced File
Anon	1993			JP 5202355	
Anon	2002			JP 2002237384	HCAPLUS
Anon	2003			EP 1363980	HCAPLUS
Anon	1981	62	C-23	Handbook Of Chemistry	
Anon	2002			U.S. Patent Application	
Antoniadis	1999			US 6004685 A	HCAPLUS
Cosimbescu	2003			US 6664396 B1	HCAPLUS
Hu	1999			US 5942340 A	HCAPLUS
Kreuder	1997			US 5621131 A	HCAPLUS
Kreuder	1998			US 5763636 A	HCAPLUS
Kreuder	1999			US 5859211 A	HCAPLUS
Kreuder	2001			US 6329082 B1	HCAPLUS
Kreuder	2002			US 6361884 B1	HCAPLUS
Langhals	1999			US 5981773 A	HCAPLUS
Lupo	1998			US 5840217 A	HCAPLUS
Rietz	2000			US 6132641 A	HCAPLUS
Tokito	2002			US 6416887 B1	HCAPLUS
Tour	1991			US 5026894 A	HCAPLUS
Uchida	2002			US 6376694 B1	HCAPLUS
Woo	2001			US 6169163 B1	HCAPLUS

L104 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:381297 HCAPLUS

DN 138:345750

TI Conjugated polymers containing arylamine for light-emitting diodes

AU Shi, Jianmin; Zheng, Shiyi

CS Eastman Kodak Co., Rochester, NY, 14650, USA

SO Polymeric Materials Science and Engineering (2001), 84, 473-474

CODEN: PMSEDG; ISSN: 0743-0515

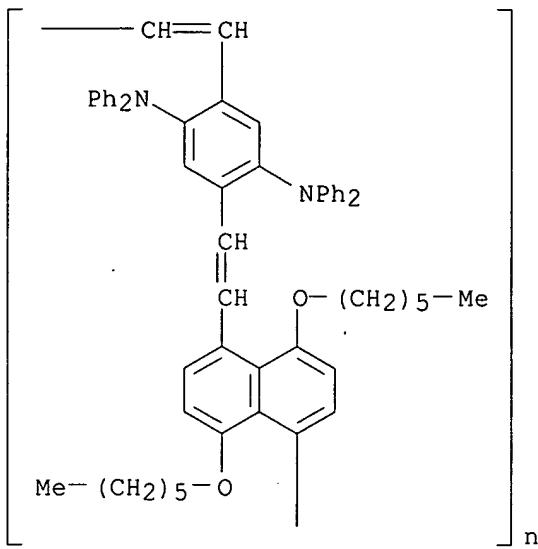
PB American Chemical Society

DT Journal

LA English

AB The authors report the synthesis and characterization of 5 polymers (P1-P5) with arylamine pendants. Various aromatic groups, were incorporated into polymers to fine tune the optoelectronic properties and long side chains were introduced to increase solubility. 9,10-Diphenylanthracene is a highly fluorescent and efficient chromophore and was incorporated into P2. Strong electron withdrawing groups such as CN increase the electron affinity of PPV polymers and facilitate electron injection, so P3 was designed based on this approach. The synthesis of the polymers, their absorption and photoluminescence in solution were reported. Single-layer ITO/polymer/Mg:Ag devices were fabricated from spin-coated

CC polymer thin films and characterized.  
 CC 73-5 (Optical, **Electron**, and Mass Spectroscopy and Other Related Properties)  
 ST Section cross-reference(s): 36, 37, 76  
 ST conjugated polymer arylamine pendant **electroluminescent** device  
 absorption **photoluminescence** PLED  
 IT **Luminescence**  
 (UV and visible; synthesis, absorption and **photoluminescence**  
 properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT Polymers, properties  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (conjugated; synthesis, absorption and **photoluminescence**  
 properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT Electric current-potential relationship  
**Electroluminescent devices**  
**Luminescence, electroluminescence**  
 (synthesis, absorption and **photoluminescence** properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT 50926-11-9, Indium tin oxide  
 RL: DEV (Device component use); USES (Uses)  
 (anode; synthesis, absorption and **photoluminescence**  
 properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT 137948-22-2  
 RL: DEV (Device component use); USES (Uses)  
 (cathode; synthesis, absorption and **photoluminescence**  
 properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT 287919-01-1P 369370-66-1P 369370-68-3P 369370-69-4P 369370-70-7P  
 380498-84-0P  
 RL: PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; synthesis, absorption and **photoluminescence**  
 properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT 369370-71-8P 369370-72-9P 369385-54-6P  
 369385-63-7P 380498-80-6P  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PYP (Physical process); PREP (Preparation); PROC (Process); USES (Uses)  
 (synthesis, absorption and **photoluminescence** properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT 123863-97-8P 187148-75-0P 207799-27-7P 369370-61-6P 369370-62-7P  
 369370-65-0P 380498-83-9P 380498-85-1P  
 RL: PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis, absorption and **photoluminescence** properties of conjugated polymers containing arylamine for light-emitting diodes)  
 IT 369370-72-9P 369385-54-6P 369385-63-7P  
 380498-80-6P  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PYP (Physical process); PREP (Preparation); PROC (Process); USES (Uses)  
 (synthesis, absorption and **photoluminescence** properties of conjugated polymers containing arylamine for light-emitting diodes)  
 RN 369370-72-9 HCPLUS  
 CN Poly[[(4,8-bis(hexyloxy)-1,5-naphthalenediyl)-1,2-ethenediyl][2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 369385-54-6 HCPLUS

CN Poly[[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl|[[(3,7-dimethyloctyl)oxy]methoxy-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 369385-63-7 HCPLUS

CN Poly[[[(2-ethylhexyl)-2,5-thiophenediyl]-1,2-ethenediyl][2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 380498-80-6 HCPLUS

CN Poly[[2,6-bis(octyloxy)-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*  
RETABLE

Referenced Author (RAU)	Year (R PY)	VOL (R VL)	PG (R PG)	Referenced Work (RWK)	Referenced File
Anon	1998			Handbook of Conducti	
Bellmann, E	1999	11	399	Chem Mater	HCPLUS
Bellmann, E	2000	12	1349	Chem Mater	HCPLUS
Burroughes, J	1990	347	539	Nature	HCPLUS
Colaneri, N	1990	42	11671	Phys Rev B	
Jiang, X	2000	76	2985	Appl Phys Lett	HCPLUS
Kraft, A	1998	37	402	Angew Chem Int Ed	
Liu, Y	1999	50	105	Acta Polym	HCPLUS
Moratti, S	1995	71	2117	Synth Met	HCPLUS

Sheats, J	1996	273	884	Science	HCAPLUS
Stenger-Smith, J	1998	31	7566	Macromolecules	HCAPLUS
Tang, C	1987	51	913	Appl Phys Lett	HCAPLUS
VanSlyke, S	1985			US 4539507	

L104 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:466837 HCAPLUS

DN 137:192418

TI Blue emission from light-emitting diodes based on lithium complex

AU Chen, Zhijian; Yu, Junsheng; Miyata, Kenji Ogino Seizo

CS Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan

SO Journal of Physics D: Applied Physics (2002), 35(11), 1099-1102

CODEN: JPAPBE; ISSN: 0022-3727

PB Institute of Physics Publishing

DT Journal

LA English

AB The authors report the optical and **electroluminescent** properties of the Li complex of (2,3-dimethyl-8-hydroxyquinoline) Li (LiMMq), exhibiting intense **photoluminescence** (PL), peaked at .apprx.458 nm. As the result of electron-donating Me groups in 8-hydroxyquinoline, the PL spectrum is blue-shifted relative to (8-hydroxyquinoline) Li (Liq). The double-layer **electroluminescent** devices with a novel polymer poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) as hole transporting layer and the LiMMq as emitting layer, sandwiched between **cathode** of Mg:Ag alloy and **anode** of In-Sn oxide, were fabricated, and the bright blue **electroluminescence** with luminance of >8000 cd.m<sup>-2</sup> was obtained. The properties indicate that the LiMMq is a potential blue emitting material for the application in light-emitting diodes.

CC 73-11 (Optical, **Electron**, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

ST blue emission light emitting diode lithium complex; LED **electroluminescence photoluminescence**  
dimethylhydroxyquinoline lithium complex

IT Cyclic voltammetry

Electric current-potential relationship

**Electroluminescent devices**

HOMO (molecular orbital)

LUMO (molecular orbital)

**Luminescence**

**Luminescence, electroluminescence**

UV and visible spectra

(blue emission from light-emitting diodes based on lithium complex)

IT 306734-14-5P

RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(blue emission from light-emitting diodes based on lithium complex)

IT 306734-14-5P

RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(blue emission from light-emitting diodes based on lithium complex)

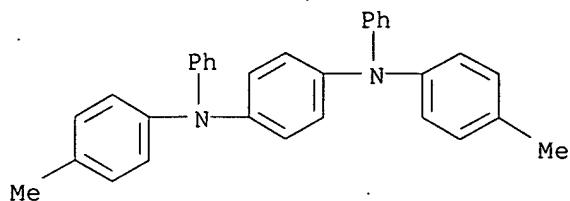
RN 306734-14-5 HCAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX NAME)

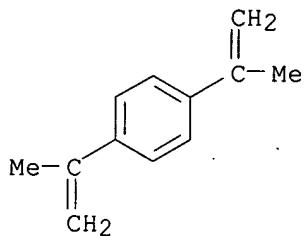
CM 1

CRN 138171-14-9

CMF C32 H28 N2



CM 2

CRN 1605-18-1  
CMF C12 H14

## RETABLE

Referenced Author (RAU)	Year (R PY)	VOL (R VL)	PG (R PG)	Referenced Work (RWK)	Referenced File
Andersson, M	1995	28	7525	Macromolecules	HCAPLUS
Bernanose, A	1953	50	263	J Chim Physique	
Bernanose, A	1953	50	64	J Chim Physique	HCAPLUS
Brown, T	2001	79	174	Appl Phys Lett	HCAPLUS
Chen, B	2001	34	30	J Phys D: Appl Phys	HCAPLUS
Chen, Z	2001	34	2679	J Phys D: Appl Phys	HCAPLUS
Choong, V	2000	33	760	J Phys D: Appl Phys	HCAPLUS
Claret, P	1970		401	Chem Industry	HCAPLUS
Diaz-Garcia, M	1997	70	3191	Appl Phys Lett	HCAPLUS
Gupta, R	1998	73	3492	Appl Phys Lett	HCAPLUS
Hide, F	1996	256	424	Chem Phys Lett	HCAPLUS
Hide, F	1996	273	1833	Science	HCAPLUS
Hung, L	1997	70	152	Appl Phys Lett	HCAPLUS
Im, W	2001	79	1387	Appl Phys Lett	HCAPLUS
Kalinowski, J	1999	32	R179	J Phys D: Appl Phys	HCAPLUS
Kido, J	1997		633	Chem Lett	HCAPLUS
Kozlov, V	1997	389	362	Nature	HCAPLUS
Kwong, R	1999	11	3709	Chem Mater	HCAPLUS
Liu, Y	2001	78	2300	Appl Phys Lett	HCAPLUS
Moon, D	2001	123	355	Synth Met	HCAPLUS
Picciolo, L	2001	78	2378	Appl Phys Lett	HCAPLUS
Rajeswaran, G	2000		974	SID Dig	
Seguy, I	2001	89	5442	J Appl Phys	HCAPLUS
Sheats, J	1996	273	884	Science	HCAPLUS
Tang, C	1987	51	913	Appl Phys Lett	HCAPLUS
Tao, Y	2000	77	1575	Appl Phys Lett	HCAPLUS

Tao, Y	12000	77	1933	Appl Phys Lett	HCAPLUS
Tessler, N	1996	1382	1695	Nature	HCAPLUS
Wang, X	12000	32	1778	Polymer J	HCAPLUS
Yu, J	1999	38	16762	Japan J Appl Phys	HCAPLUS
Zhu, W	12000	111-1	445	Synth Met	HCAPLUS

L104 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:895587 HCAPLUS

DN 136:45407

TI Electroluminescent devices having arylamine polymers

IN Shi, Jianmin; Zheng, Shiyong

PA Eastman Kodak Company, USA

SO U.S., 32 pp.

CODEN: USXXAM

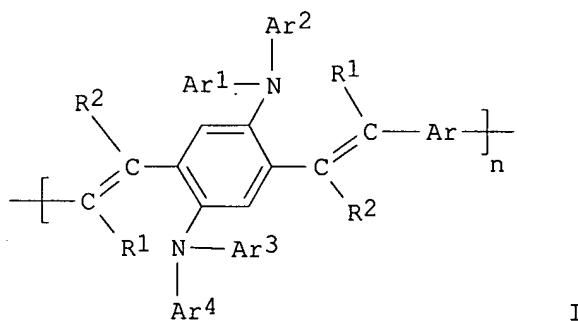
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6329086	B1	20011211	US 2000-593127	20000613 <--
	TW 530076	B	20030501	TW 2001-90110070	20010427 <--
	EP 1164178	A1	20011219	EP 2001-202101	20010601 <--
	EP 1164178	B1	20030903		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002083683	A	20020322	JP 2001-176991	20010612 <--
PRAI	US 2000-593127	A	20000613 <--		

GI



AB Electroluminescent devices which include an anode, a cathode, and a polymer luminescent material disposed between the anode and cathode are described in which the polymer luminescent material includes arylamine moiety are described by the general formula I (R1 and R2 = independently selected H, C1-24 alkyl, C6-40 (un)substituted aryl, C4-40 (un)substituted heteroaryl, or cyano groups; and Ar, Ar1-4 = independently selected C6-40 (un)substituted aryl; and/or C4-40 (un)substituted heteroaryl groups). The polymer luminescent material may be doped with ≥1 fluorescent dyes or other light-emitting materials.

IC ICM H05B0033-14

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

ST   electroluminescent device arylamine polymer

IT   **Electroluminescent devices**  
       (electroluminescent devices using arylamine polymers)

IT   **Luminescent substances**  
       (electroluminescent; electroluminescent devices  
       using arylamine polymers)

IT   369370-71-8P 369370-72-9P 369385-63-7P   380498-76-0P  
   380498-77-1P 380498-78-2P 380498-79-3P  
   380498-80-6P   380498-81-7P 380643-48-1P  
   RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
      (Preparation); USES (Uses)  
      (electroluminescent devices using arylamine polymers)

IT   332083-42-8P   369370-66-1P   369370-68-3P   369370-69-4P   369370-70-7P  
   380498-84-0P   380498-85-1P   380498-87-3P   380498-88-4P  
   RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP  
      (Preparation); USES (Uses)  
      (electroluminescent devices using arylamine polymers)

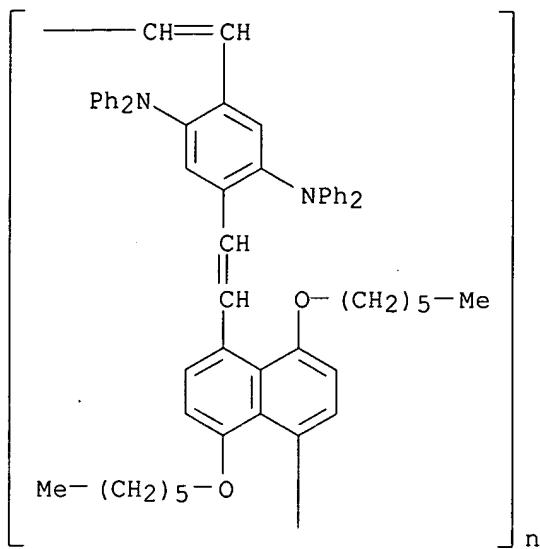
IT   75-86-5   83-56-7, 1,5-Dihydroxynaphthalene ( 84-60-6,  
   2,6-Dihydroxyanthraquinone 86-73-7, Fluorene 111-25-1, n-Hexylbromide  
   122-52-1, Triethyl phosphite 124-41-4, Sodium methoxide 288-32-4,  
   Imidazole, reactions 581-43-1, 2,6-Dihydroxynaphthalene 591-50-4,  
   Iodobenzene 872-31-1, 3-Bromothiophene 873-75-6, 4-Bromobenzyl alcohol  
   7726-95-6, Bromine, reactions 7789-60-8, Phosphorus tribromide  
   18162-48-6 18908-66-2, 2-Ethylhexyl bromide 25495-92-5, Iodohexane  
   26299-14-9, Pyridinium chlorochromate 27712-87-4 30525-89-4,  
   Paraformaldehyde  
   RL: RCT (Reactant); RACT (Reactant or reagent)  
      (electroluminescent devices using arylamine polymers)

IT   84-59-3P, 2,6-Dibromo-1,5-dihydroxynaphthalene 4898-58-2P   14297-60-0P  
   87736-74-1P 102550-78-7P, 2,6-Bis(hexyloxy)naphthalene 121134-38-1P  
   123863-97-8P 149256-98-4P, 1,5-Bis(hexyloxy)naphthalene 182684-43-1P  
   187148-75-0P 207799-27-7P 207799-29-9P, 2,6-Dibromo-1,5-  
   bis(hexyloxy)naphthalene 207799-30-2P 207799-31-3P,  
   2,6-Bis(bromomethyl)-1,5-bis(hexyloxy)naphthalene 369370-61-6P  
   369370-62-7P 369370-65-0P 380498-82-8P 380498-83-9P 380498-86-2P  
   RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
      (Reactant or reagent)  
      (electroluminescent devices using arylamine polymers)

IT   369370-72-9P 369385-63-7P 380498-78-2P  
   380498-79-3P 380498-80-6P 380643-48-1P  
   RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
      (Preparation); USES (Uses)  
      (electroluminescent devices using arylamine polymers)

RN   369370-72-9 HCPLUS

CN   Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-  
      bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI). (CA INDEX NAME)



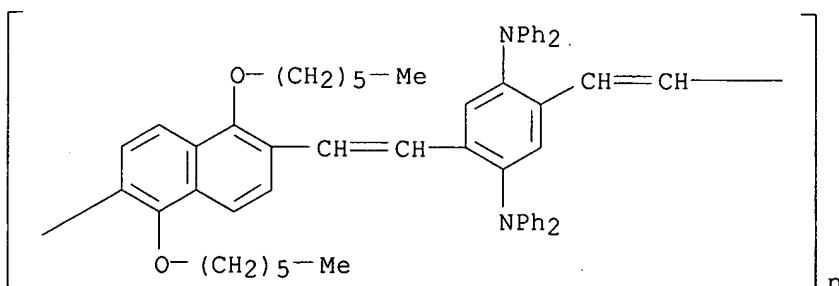
RN 369385-63-7 HCPLUS

CN Poly[[(2-ethylhexyl)-2,5-thiophenediy1]-1,2-ethenediy1[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediy1] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

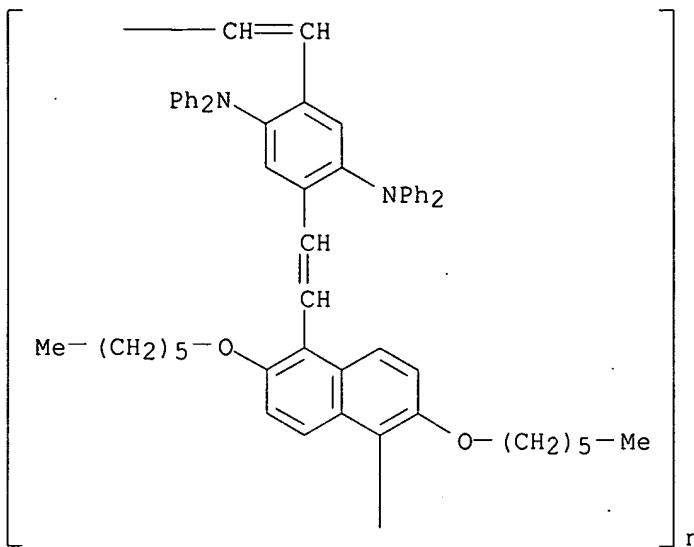
RN 380498-78-2 HCPLUS

CN Poly[[1,5-bis(hexyloxy)-2,6-naphthalenediy1]-1,2-ethenediy1[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediy1] (9CI) (CA INDEX NAME)



RN 380498-79-3 HCPLUS

CN Poly[[2,6-bis(hexyloxy)-1,5-naphthalenediy1]-1,2-ethenediy1[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediy1] (9CI) (CA INDEX NAME)



RN 380498-80-6 HCPLUS

CN Poly[[2,6-bis(octyloxy)-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

RN 380643-48-1 HCPLUS

CN Poly[[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl[(decyloxy)methoxy-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

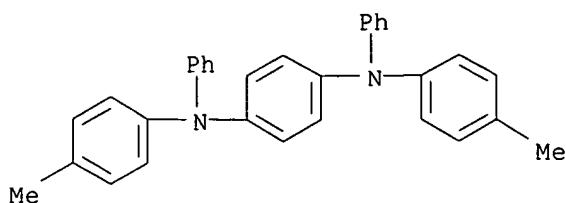
## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Burroughes	1990	347	1539	Nature	HCPLUS
Grem	1992		36	Advanced Materials	HCPLUS
Hung	1998			US 5776622	HCPLUS
Namiki	1995			US 5429884	HCPLUS
Ohmori	1991	30	L-1941	Japanese Journal of	
Shi	1999			US 5935721	HCPLUS
Shi	1999			US 5972247	HCPLUS
Son	1995	269	376	Science	HCPLUS
Stenger-Smith	1999			US 5904990	HCPLUS
Stenger-Smith	1998	31	7566	Macromolecules	HCPLUS
Tang	1982			US 4356429	HCPLUS
Tang	1988			US 4769292	HCPLUS

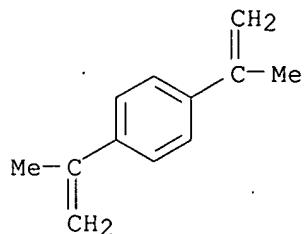
L104 ANSWER 7 OF 15 HCPLUS COPYRIGHT 2007 ACS on STN

AN 2001:689529 HCPLUS

DN 135:378433  
 TI Blue and yellow emission from derivatives of tris(8-hydroxyquinoline)aluminum light-emitting diodes  
 AU Chen, Zhijian; Yu, Junsheng; Sone, Masato; Miyata, Seizo; Lu, Youmei; Watanabe, Toshiyuki  
 CS Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan  
 SO Journal of Physics D: Applied Physics (2001), 34(17), 2679-2682  
 CODEN: JPAPBE; ISSN: 0022-3727  
 PB Institute of Physics Publishing  
 DT Journal  
 LA English .  
 AB The novel derivs. of tris(8-hydroxyquinoline)aluminum (Alq3), tris[5-(methyl-malononitrile)-8-hydroxyquinoline]aluminum and tris(2,3-dimethyl-8-hydroxyquinoline)aluminum were synthesized. The double-layer **electroluminescent** devices were fabricated with a novel polymer poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) as a hole transporting layer and the derivs. as an emitting layer, sandwiched between an **anode** of Mg:Ag and a **cathode** of In-Sn oxide. Bright blue and yellow **electroluminescence** emissions were obtained from the devices. The exptl. results indicate that a functional group of electron acceptors connected to 8-hydroxyquinoline results in the emission red shift and a functional group of electron donors results in the emission blueshift. Alq3 and its derivs. are expected to be used as an emitter to achieve various color emissions.  
 CC 73-11 (Optical, **Electron**, and Mass Spectroscopy and Other Related Properties)  
 ST blue yellow emission hydroxyquinoline aluminum deriv LED; light emitting diode **electroluminescence**  
 IT **Electroluminescent devices**  
     (blue and yellow emission from derivs. of tris(8-hydroxyquinoline)aluminum light-emitting diodes)  
 IT **Luminescence, electroluminescence**  
     (blue and yellow; blue and yellow emission from derivs. of tris(8-hydroxyquinoline)aluminum light-emitting diodes)  
 IT 306734-14-5 374690-46-7 374690-47-8, Tris(2,3-dimethyl-8-hydroxyquinolinato)aluminum  
     RL: DEV (Device component use); PRP (Properties); USES (Uses)  
     (blue and yellow emission from derivs. of tris(8-hydroxyquinoline)aluminum light-emitting diodes)  
 IT 306734-14-5  
     RL: DEV (Device component use); PRP (Properties); USES (Uses)  
     (blue and yellow emission from derivs. of tris(8-hydroxyquinoline)aluminum light-emitting diodes)  
 RN 306734-14-5 HCAPLUS  
 CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 138171-14-9  
 CMF C32 H28 N2



CM 2

CRN 1605-18-1  
CMF C12 H14

## RETABLE

Referenced Author (RAU)	Year   VOL   PG	Referenced Work (RWK)	Referenced File
	(R PY)   (R VL)   (R PG)		
Arbeloa, T	1999   299   315	Chem Phys Lett	HCPLUS
Bernanose, A	1953   50   261	J Chim Phys	HCPLUS
Chen, Z	2001   89   7895	J Appl Phys	HCPLUS
Chen, Z	2000   33   1643	J Phys D: Appl Phys	HCPLUS
Greenham, N	1994   6   491	Adv Mater	HCPLUS
Gu, G	1997   22   396	Opt Lett	HCPLUS
Kido, J	1997     963	Chem Lett	HCPLUS
Kim, J	2000   88   1073	J Appl Phys	HCPLUS
Ma, D	1997   91   331	Synth Met	HCPLUS
Miyata, S	1997	Organic Electrolumin	
Tang, C	1987   51   913	Appl Phys Lett	HCPLUS
Tao, Y	2000   77   933	Appl Phys Lett	HCPLUS
Wang, X	2000   32   778	Polym J	HCPLUS
Yang, Y	1996   79   934	J Appl Phys	HCPLUS
Yu, J	1999   38   6762	Japan J Appl Phys	HCPLUS

L104 ANSWER 8 OF 15 HCPLUS COPYRIGHT 2007 ACS on STN

AN 2001:582418 HCPLUS

DN 135:336416

TI Conjugated polymers containing arylamine pendants for light-emitting diodes

AU Shi, Jianmin; Zheng, Shiyi

CS Research &amp; Development, Eastman Kodak Company, Rochester, NY, 14650, USA

SO Macromolecules (2001), 34(19), 6571-6576

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB New conjugated light-emitting polymers containing arylamine pendants have been designed, synthesized, and characterized. The resulting polymers are thermally stable, have rigid backbones, show high Tg and Td values, and are readily soluble in organic solvents. The single-layer LED devices fabricated from these polymers emit light ranging from bright yellow to bright red. The color of the emitting light can be tuned by incorporating various aromatic units. The devices show very low turn-on voltages.

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST Section cross-reference(s): 38, 76  
light emitting diode polymer arylamine pendant group prepn;  
electroluminescent device polymer arylamine pendant group prepn

IT Electroluminescent devices  
(polymer; preparation and application of conjugated polymers containing arylamine pendant group for light-emitting diodes)

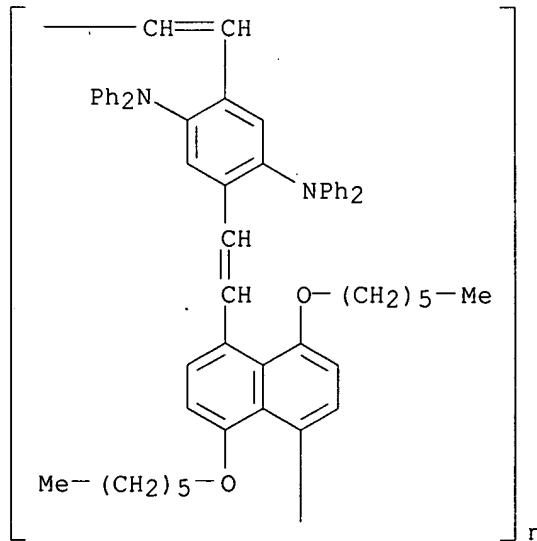
IT 50926-11-9, Indium tin oxide  
RL: DEV (Device component use); USES (Uses)  
(anode; preparation and application of conjugated polymers containing arylamine pendant group for light-emitting diodes)

IT 369370-71-8P 369370-72-9P 369370-73-0P 369370-74-1P  
369370-75-2P 369370-76-3P 369385-54-6P 369385-63-7P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation and application of conjugated polymers containing arylamine pendant group for light-emitting diodes)

IT 369370-72-9P 369385-54-6P 369385-63-7P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation and application of conjugated polymers containing arylamine pendant group for light-emitting diodes)

RN 369370-72-9 HCAPLUS

CN Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 369385-54-6 HCAPLUS  
CN Poly[[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl[[3,7-

dimethyloctyl)oxy]methoxy-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 369385-63-7 HCAPLUS

CN Poly[[(2-ethylhexyl)-2,5-thiophenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RETABLE

Referenced Author (RAU)	Year (R PY)	VOL (R VL)	PG (R PG)	Referenced Work (R WK)	Referenced File
Bellmann, E	1999	11	1399	Chem Mater	H CAPLUS
Bellmann, E	2000	12	1349	Chem Mater	H CAPLUS
Bernius, M	2000	12	1737	Adv Mater	H CAPLUS
Burroughes, J	1990	347	539	Nature	H CAPLUS
Colaneri, N	1990	42	11671	Phys Rev B	
Faraggi, E	1995	7	742	Adv Mater	H CAPLUS
Groenendaal, L	2000	12	481	Adv Mater	H CAPLUS
Hanack, M	1996	8	663	Adv Mater	H CAPLUS
Jiang, X	2000	76	2985	Appl Phys Lett	H CAPLUS
Kim, C	1998			US 5807974	H CAPLUS
Kraft, A	1998	37	402	Angew Chem, Int Ed	
Liu, Y	1999	50	105	Acta Polym	H CAPLUS
Moratti, S	1995	71	2117	Synth Met	H CAPLUS
Onoda, M	1995	71	2181	Synth Met	H CAPLUS
Sheats, J	1996	273	884	Science	H CAPLUS
Skotheim, T	1998			Handbook of Conducti	
Stenger-Smith, J	1998	31	7566	Macromolecules	H CAPLUS
Tang, C	1987	51	913	Appl Phys Lett	H CAPLUS
Vanslyke, S	1985			US 4539507	
Yang, Y	1994	64	1245	Appl Phys Lett	H CAPLUS

L104 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:422364 HCAPLUS

DN 135:167478

TI Influence of sensitizer on organic **electroluminescence**

AU Chen, Zhijian; Yu, Junsheng; Sakuratani, Yuuki; Li, Minrun; Sone, Masato; Miyata, Seizo; Watanabe, Toshiyuki; Wang, Xiaoqing; Sato, Hisaya

CS Graduate School of Bio-Applications and System Engineering, Tokyo

University of Agriculture and Technology, Koganei, Tokyo, 184-8588, Japan

SO Journal of Applied Physics (2001), 89(12), 7895-7898

CODEN: JAPIAU; ISSN: 0021-8979

PB American Institute of Physics

DT Journal

LA English

AB The authors synthesized a polymer, poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) (PDAIPD), of which the energy of the HOMO was measured to be 5.6 eV below vacuum level. PDAIPB was used as a hole transporter in a light emitting diode, with tri(8-hydroxyquinoline)aluminum (Alq3) as an electron transporter and emitting layer to ameliorate the stability of the device, and fullerene doped in the hole transporting layer as a sensitizer to study the influence of sensitizer on organic **electroluminescence** (EL).

Internal EL quantum efficiency as high as 7.8% was obtained under an applied elec. field of  $1.2 \times 10^6$  V/cm and doping fullerene concentration 0.9%.

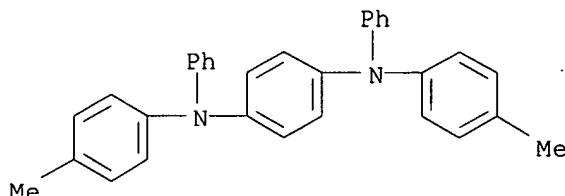
A

function for EL quantum efficiency in terms of the dopant concentration is derived. The theor. anal. is consistent with the exptl. results.

CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38, 73  
 ST fullerene sensitized polyphenyleneamine **electroluminescence**;  
 diisopropenylbenzene phenylenediamine deriv copolymer hole transport  
 IT Electric current-potential relationship  
**Electroluminescent devices**  
**Luminescence, electroluminescence**  
 (influence of fullerene sensitizer on **electroluminescence**  
 polymer hole transporting layer)  
 IT Polyamines  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (influence of fullerene sensitizer on **electroluminescence**  
 polymer hole transporting layer)  
 IT 306734-14-5  
 RL: DEV (Device component use); POF (Polymer in formulation); PRP  
 (Properties); USES (Uses)  
 (influence of fullerene sensitizer on **electroluminescence**  
 polymer hole transporting layer)  
 IT 2085-33-8 50926-11-9, ITO  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (influence of fullerene sensitizer on **electroluminescence**  
 polymer hole transporting layer)  
 IT 99685-96-8, fullerene C60  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (sensitizer; influence of fullerene sensitizer on  
**electroluminescence** polymer hole transporting layer)  
 IT 306734-14-5  
 RL: DEV (Device component use); POF (Polymer in formulation); PRP  
 (Properties); USES (Uses)  
 (influence of fullerene sensitizer on **electroluminescence**  
 polymer hole transporting layer)  
 RN 306734-14-5 HCAPLUS  
 CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with  
 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX NAME)

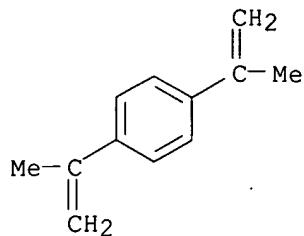
CM 1

CRN 138171-14-9  
 CMF C32 H28 N2



CM 2

CRN 1605-18-1  
 CMF C12 H14



## RETABLE

Referenced Author (RAU)	Year   VOL   PG	Referenced Work (RWK)	Referenced File
	(R PY)   (R VL)   (R PG)		
Andersson, M	1995   28   7525	Macromolecules	HCAPLUS
Bernanose, A	1953   50   64	Chim Physique	HCAPLUS
Chen, Z	1998   73   3629	Appl Phys Lett	HCAPLUS
Chen, Z	2000   33   1643	J Phys D	HCAPLUS
Diaz-Garcia, M	1997   70   3191	Appl Phys Lett	HCAPLUS
Friend, R	1999   397   121	Nature (London)	HCAPLUS
Greenham, N	1994   6   491	Adv Mater	HCAPLUS
Gu, G	1997   22   396	Opt Lett	HCAPLUS
Gupta, R	1998   73   3492	Appl Phys Lett	HCAPLUS
Hide, F	1996   256   424	Chem Phys Lett	HCAPLUS
Hide, F	1996   273   1833	Science	HCAPLUS
Kalinowski, J	1999   33   197	J Phys D	
Lossew, O	1923   18   16	Telegrafia i Telefon	
Ma, D	1997   91   331	Synth Met	HCAPLUS
Miyata, S	1997	Organic Electrolumin	
Sheats, J	1996   273   884	Science	HCAPLUS
Tang, C	1987   51   913	Appl Phys Lett	HCAPLUS
Tao, Y	2000   77   933	Appl Phys Lett	HCAPLUS
Tessler, N	1996   382   695	Nature (London)	HCAPLUS
Wang, X	2000   32   778	Polym J (Tokyo)	HCAPLUS
Yang, Y	1996   79   934	J Appl Phys	HCAPLUS
Yu, Y	1999   38   6762	Jpn J Appl Phys, Par	

L104 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:297576 HCAPLUS

DN 134:346283

TI **Electroluminescent devices having naphthalanthracene-based polymers**

IN Shi, Jianmin; Zheng, Shiyi

PA Eastman Kodak Company, USA

SO Eur. Pat. Appl., 56 pp.

CODEN: EPXXDW

DT Patent

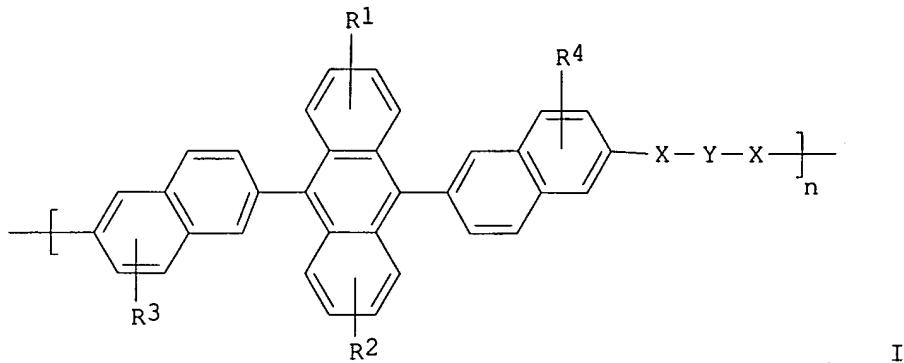
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1094101	A2	20010425	EP 2000-203504	20001009 <--
	EP 1094101	A3	20040331		
	EP 1094101	B1	20060111		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6361887		B1	20020326	US 1999-421980	19991020 <--
JP 2001181619		A	20010703	JP 2000-320865	20001020 <--

PRAI US 1999-421980  
GI

A 19991020 &lt;--



**AB** **Electroluminescent** devices comprising an **anode**, a **cathode**, and polymer luminescent materials disposed between the **anode** and **cathode** are described in which the polymeric luminescent materials include 9,10-di-(2-naphthyl)anthracene-based polymers described by the general formula I (R1-4 = independently selected H, alkyl, C1-24 alkoxy, C6-28 (un)substituted aryl, C4-40 (un)substituted heteroaryl, F, Cl, Br, cyano, or nitro groups; X = a linking group; and Y includes  $\geq 1$  comonomer units that are (un)substituted alkyl, alkenyl, aryl, heteroaryl, or conjugated groups).

**IC** ICM C09K0011-06  
ICS H05B0033-14

**CC** 73-11 (Optical, **Electron**, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

**ST** naphthyl anthracene polymer **electroluminescent** device

**IT** **Electroluminescent** devices  
(**electroluminescent** devices using naphthylanthracene-based polymers)

**IT** Phosphors

(**electroluminescent**; **electroluminescent** devices using naphthylanthracene-based polymers)

IT	337368-77-1	337368-80-6	337368-87-3	337368-91-9	337368-95-3
	337369-10-5	337369-13-8	337369-16-1	337369-19-4	337369-23-0
	337369-27-4	337369-36-5	337369-46-7	337369-49-0	337369-55-8
	337369-58-1	337369-61-6	337369-64-9	337369-67-2	337369-69-4
	337369-71-8	337369-73-0	337369-75-2	337369-77-4	337369-78-5
	337369-79-6	337369-80-9	337369-82-1	337369-86-5	337369-88-7
	337369-90-1	337369-92-3	337369-94-5	337369-95-6	337369-97-8
	337369-99-0	337370-01-1	337370-03-3	337370-05-5	337370-07-7
	337370-08-8	337370-10-2	337370-12-4	337370-13-5	337370-14-6
	337370-16-8	337370-18-0	337370-20-4	337370-21-5	337370-23-7
	337370-25-9	337370-27-1	337370-29-3	337370-31-7	337370-33-9
	337370-35-1	337370-37-3	337370-39-5	337370-41-9	337370-43-1
	337370-45-3	337370-47-5	337370-49-7	337370-51-1	337370-53-3
	337370-55-5	337370-57-7	337370-59-9	337370-69-1	337370-72-6
	337370-75-9	337370-78-2	337370-84-0	337370-87-3	337370-90-8
	337370-93-1	337370-97-5	337371-00-3	337371-01-4	337371-04-7
	337371-08-1	337371-10-5	337371-11-6	337371-13-8	337371-14-9
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337371-71-8	337371-76-3	337371-78-5	337371-80-9	337371-82-1
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337372-12-0	337372-15-3	337372-19-7	337372-22-2	337372-25-5
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337372-43-7	337372-47-1	337372-50-6	337372-52-8	337372-55-1
337372-57-3	337372-60-8	337372-63-1	337372-65-3	337372-67-5
337372-70-0	337372-73-3	337372-76-6	337372-79-9	337372-81-3
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337373-10-1	337373-13-4	337373-16-7	337373-19-0	337373-21-4
337373-23-6	337373-26-9	337373-29-2	337373-31-6	337373-34-9
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337457-30-4	337457-56-4	337458-81-8	337458-82-9	337458-86-3
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337459-13-9	337459-14-0	337459-15-1	337459-16-2	337459-17-3
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337459-71-9	337459-79-7	337459-80-0	337459-81-1	337459-82-2
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337460-57-8	337460-58-9	337460-62-5	337460-63-6	337460-69-2
337460-71-6	337460-72-7	337460-75-0	337460-76-1	337460-77-2
337460-78-3	337460-79-4	337460-97-6		

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices using naphthalanthracene-based polymers)

IT	337461-03-7	337461-04-8	337461-06-0	337461-07-1	337461-08-2
	337461-09-3	337461-10-6	337461-11-7	337461-13-9	337461-14-0
	337461-15-1	337461-16-2	337461-18-4	337461-19-5	337461-20-8
	337461-21-9	337461-22-0	337461-24-2	337461-25-3	337461-26-4
	337463-04-4	337463-67-9	337464-26-3	337464-27-4	337464-28-5
	337464-29-6	337464-30-9	337464-31-0	<b>337464-32-1</b>	
	<b>337464-44-5</b>	337464-45-6	<b>337464-46-7</b>		
	<b>337464-47-8</b>	337464-48-9	337464-60-5	337464-61-6	
	337465-00-6	337465-01-7	337465-03-9	337465-04-0	337465-12-0
	337465-14-2	337465-16-4	337465-17-5	<b>337465-19-7</b>	
	337465-22-2	337465-23-3	337465-44-8	337465-45-9	337465-98-2

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices using naphthalanthracene-based polymers)

IT	337368-83-9P	337368-99-7P	337369-03-6P	337369-07-0P	337369-31-0P
	337369-41-2P	337369-52-5P	337369-84-3P	337370-80-6P	337371-21-8P
	337371-74-1P				

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(electroluminescent devices using naphthalanthracene-based polymers)

IT	18798-85-1P	18800-99-2P	62375-58-0P	99964-58-6P	106679-32-7P
	235099-48-6P	332083-42-8P	332083-43-9P	332083-44-0P	332083-45-1P
	332083-46-2P	337369-40-1P	337370-61-3P	337370-62-4P	337370-63-5P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(electroluminescent devices using naphthalanthracene-based

polymers)

IT 84-60-6, 2,6-Dihydroxyanthraquinone 98-06-6, tert-Butyl benzene  
 106-89-8, Epichlorohydrin, reactions 121-43-7, Trimethyl borate  
 126-30-7, 2,2-Dimethylpropane-1,3-diol 143-15-7, 1-Bromododecane  
 523-27-3, 9,10-Dibromoanthracene 628-13-7, Pyridine hydrochloride  
 5111-65-9, 2-Bromo-6-methoxy naphthalene 7439-95-4, Magnesium, reactions  
 15231-91-1, 6-Bromo-2-hydroxynaphthalene 18908-66-2, 2-Ethylhexyl  
 bromide 25620-62-6, Dibromoethane 32703-79-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (electroluminescent devices using naphthylanthracene-based polymers)

IT 38046-82-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (electroluminescent devices using naphthylanthracene-based polymers)

IT 337464-32-1 337464-44-5 337464-46-7  
 337464-47-8 337465-19-7  
 RL: DEV (Device component use); USES (Uses)  
 (electroluminescent devices using naphthylanthracene-based polymers)

RN 337464-32-1 HCPLUS  
 CN Poly[[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]-2,6-naphthalenediyl-1,2-ethenediyl-1,4-phenylene(cyano-1,2-ethenediyl)-1,4-phenylene(cyano-1,2-ethenediyl)-1,4-phenylene-1,2-ethenediyl-2,6-naphthalenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 337464-44-5 HCPLUS  
 CN Poly[[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl](hexyl-2,6-naphthalenediyl)-1,2-ethenediyl[1,1'-biphenyl]-4,4'-diyl(cyano-1,2-ethenediyl)[2,2',5,5'-tetrakis(hexyloxy)[1,1'-biphenyl]-4,4'-diyl](cyano-1,2-ethenediyl)[1,1'-biphenyl]-4,4'-diyl-1,2-ethenediyl(hexyl-2,6-naphthalenediyl)] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 337464-46-7 HCPLUS  
 CN Poly[[1,1'-bis(2-ethylhexyl)[2,2'-bi-1H-pyrrole]-5,5'-diyl]-1,2-ethenediyl(hexyl-2,6-naphthalenediyl)[2,6-bis(1,1-dimethylethyl)-9,10-anthracenediyl](hexyl-2,6-naphthalenediyl)-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 337464-47-8 HCPLUS  
 CN Poly[[1,1',1'''-tris(2-ethylhexyl)-3,3',3'',4,4',4'''-tetrahexyl[2,2':5',2'''-ter-1H-pyrrole]-5,5'''-diyl]-1,2-ethenediyl(hexyl-2,6-naphthalenediyl)[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl](hexyl-2,6-naphthalenediyl)-1,2-ethenediyl] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 337465-19-7 HCPLUS  
 CN Poly[(4,4'-dihexyl[6,6'-biquinoline]-2,2'-diyl)-1,4-phenylene-1,2-ethenediyl(hexyl-2,6-naphthalenediyl)[2,6-bis(1,1-dimethylethyl)-9,10-anthracenediyl](hexyl-2,6-naphthalenediyl)-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L104 ANSWER 11 OF 15 HCPLUS COPYRIGHT 2007 ACS on STN  
 AN 2000:824570 HCPLUS

DN 134:12417  
 TI Conducting polymers from polyvinylquinoxalines for **semiconductor**  
 devices  
 IN Sage, Ian Charles; Wood, Emma Louise; Till, Stephen John; Feast, William  
 James; Peace, Richard John  
 PA The Secretary of State for Defence, UK  
 SO PCT Int. Appl., 34 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000070692	A1	20001123	WO 2000-GB1692	20000503 <--
	W: CN, GB, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1186067	A1	20020313	EP 2000-929670	20000503 <--
	EP 1186067	B1	20051005		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2003500838	T	20030107	JP 2000-619041	20000503 <--
	US 6716371	B1	20040406	US 2001-959617	20011106 <--
PRAI	GB 1999-10964	A	19990512	<--	
	WO 2000-GB1692	W	20000503	<--	
AB	This invention relates to an organic <b>semiconductor</b> device comprising a substrate bearing an organic layer sandwiched between electrode structures wherein the organic layer comprises a polymer of general Formula -(CH <sub>2</sub> CXY) <sub>m</sub> -: wherein X is selected from H, CN, F, Cl, Br, COOCH <sub>3</sub> . Y is given by pyrimidine, pyridazine and pyridine derivs.; m = 5-20,000.				
IC	ICM H01L0051-30				
CC	76-3 ( <b>Electric Phenomena</b> )				
ST	Section cross-reference(s): 35, 38, 73, 74				
IT	polyvinylquinoxaline conductor polymer <b>semiconductor</b> device				
IT	Conducting polymers				
	<b>Electroluminescent devices</b>				
IT	Polymerization				
	<b>Semiconductor devices</b>				
	(conducting polymers from polyvinylquinoxalines for <b>semiconductor</b> devices)				
IT	Dyes				
	(coumarin; conducting polymers from polyvinylquinoxalines for <b>semiconductor</b> devices)				
IT	Electrooptical imaging devices				
	(photorefractive; conducting polymers from polyvinylquinoxalines for <b>semiconductor</b> devices)				
IT	Dyes				
	(pyromethene; conducting polymers from polyvinylquinoxalines for <b>semiconductor</b> devices)				
IT	Metals, uses				
	RL: DEV (Device component use); USES (Uses)				
	(with conducting polymers from polyvinylquinoxalines for <b>semiconductor</b> devices)				
IT	151486-56-5, PM580 157410-23-6, PM 650				
	RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)				
	(LED from; conducting polymers from polyvinylquinoxalines for <b>semiconductor</b> devices)				
IT	50318-60-0P				
	RL: POF (Polymer in formulation); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				

(conducting polymers from polyvinylquinoxalines for  
semiconductor devices)

IT 25067-59-8, Poly(vinyl carbazole) 78099-29-3 167893-11-0 227176-03-6  
247132-45-2 251932-67-9 251932-69-1 251932-71-5 **251932-73-7**  
**251932-75-9** 251932-77-1

RL: POF (Polymer in formulation); TEM (Technical or engineered material  
use); USES (Uses)

(conducting polymers from polyvinylquinoxalines for  
semiconductor devices)

IT 16107-85-0P 24249-63-6P 308145-32-6P 308145-34-8P 308145-35-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)

(conducting polymers from polyvinylquinoxalines for  
semiconductor devices)

IT 308145-33-7  
RL: TEM (Technical or engineered material use); USES (Uses)

(conducting polymers from polyvinylquinoxalines for  
semiconductor devices)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7439-95-4,  
Magnesium, uses 7440-19-9, Samarium, uses 7440-22-4, Silver, uses  
7440-70-2, Calcium, uses 12798-95-7 37271-44-6 50926-11-9, ITO  
RL: DEV (Device component use); USES (Uses)

(with conducting polymers from polyvinylquinoxalines for  
semiconductor devices)

IT 86-73-7, Fluorene 191-07-1, Coronene 191-48-0, Decacylene 198-55-0,  
Perylene 517-51-1, Rubrene 7440-18-8D, Ruthenium, chelates, uses  
7440-19-9D, Samarium, chelates, uses 7440-52-0D, Erbium, chelates, uses  
7440-53-1D, Europium, chelates, uses 13842-55-2, Boron difluoride  
28351-02-2, Diphenylanthracene

RL: POF (Polymer in formulation); USES (Uses)  
(with conducting polymers from polyvinylquinoxalines for  
semiconductor devices)

IT **251932-73-7 251932-75-9**  
RL: POF (Polymer in formulation); TEM (Technical or engineered material  
use); USES (Uses)

(conducting polymers from polyvinylquinoxalines for  
semiconductor devices)

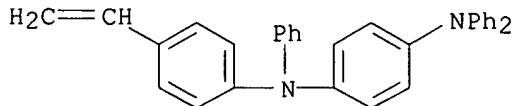
RN 251932-73-7 HCAPLUS

CN 1,4-Benzenediamine, N-(4-ethenylphenyl)-N,N',N'-triphenyl-, homopolymer  
(9CI) (CA INDEX NAME)

CM 1

CRN 251932-72-6

CMF C32 H26 N2



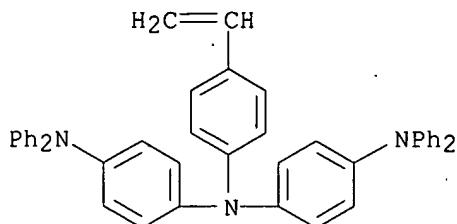
RN 251932-75-9 HCAPLUS

CN 1,4-Benzenediamine, N-[4-(diphenylamino)phenyl]-N-(4-ethenylphenyl)-N',N'-  
diphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 251932-74-8

CMF C44 H35 N3



## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
AGFA Gevaert AG	1969			DE 1497121 A	
Anon	1982	006	C-131	Patent Abstracts of	
Bradley, D	1996	273	39	Thin Solid Films	
Ricoh KK	1982			JP 57-119905 A	HCAPLUS
Sumitomo Chemical Co	1999			EP 0901174 A	HCAPLUS
Yamamoto, T	1994	33	2B	Japanese Journal of	

L104 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2000:685089 HCAPLUS

DN 133:350896

TI Synthesis of new hole transport polymers based on *N,N'*-diphenyl-*N,N'*-bis(4-methylphenyl)-1,4-phenylenediamine

AU Wang, Xiaoqing; Chen, Zhijian; Ogino, Kenji; Sato, Hisaya; Miyata, Seizo; Tan, Huiming

CS Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan

SO Polymer Journal (Tokyo) (2000), 32(9), 778-783  
CODEN: POLJB8; ISSN: 0032-3896

PB Society of Polymer Science, Japan

DT Journal

LA English

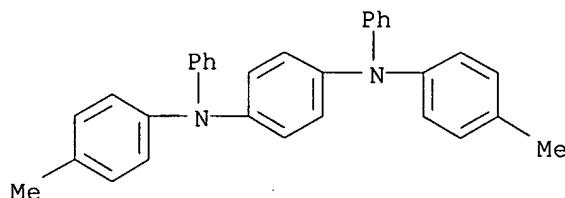
AB New hole transport polymers were prepared by polyaddn. of *N,N'*-diphenyl-*N,N'*-bis(4-methylphenyl)-1,4-phenylenediamine with divinyl or diisopropenylbenzene and were characterized by <sup>1</sup>H NMR, DSC, UV absorption spectra and cyclic voltammetry. These polymers exhibit high glass transition temps. and low oxidation potentials. Two-layer electroluminescent (EL) devices, in which the polymers were spin cast on ITO anode as the hole transport layer and aluminum tris(8-hydroxyquinoline) (Alq) was used as the emitting layer, gave a high brightness of above 10000 cd m<sup>-2</sup> with an operating voltage of less than 15 V.CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38, 73ST hole transport phenylenediamine deriv polymer; divinylbenzene phenylenediamine deriv copolymer hole transport; diisopropenylbenzene phenylenediamine deriv copolymer hole transport;  
electroluminescent device phenylenediamine deriv copolymer; ITO  
electroluminescent device; aluminum hydroxyquinoline  
electroluminescent deviceIT Electroluminescent devices  
(electroluminescent devices prepared from diphenylbis(methylphenyl)phenylenediamine-based polymers, ITO and aluminum tris(hydroxyquinoline))

- IT Electric current-potential relationship  
 Glass transition temperature  
**Luminescence, electroluminescence**  
 Redox potential  
 (of hole transport polymers based on diphenylbis(methylphenyl)phenylene diamine)
- IT Polyamines  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (preparation of hole transport polymers based on diphenylbis(methylphenyl)phenylenediamine and **electroluminescent devices**)
- IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 50926-11-9, ITO  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (**electroluminescent devices prepared from diphenylbis(methylphenyl)phenylenediamine-based polymers, ITO and aluminum tris(hydroxyquinoline)**)
- IT 306734-13-4P 306734-14-5P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (preparation of hole transport polymers based on diphenylbis(methylphenyl)phenylenediamine and **electroluminescent devices**)
- IT 306734-13-4P 306734-14-5P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (preparation of hole transport polymers based on diphenylbis(methylphenyl)phenylenediamine and **electroluminescent devices**)
- RN 306734-13-4 HCPLUS
- CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with 1,4-diethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 138171-14-9

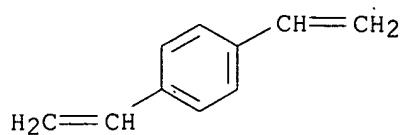
CMF C32 H28 N2



CM 2

CRN 105-06-6

CMF C10 H10



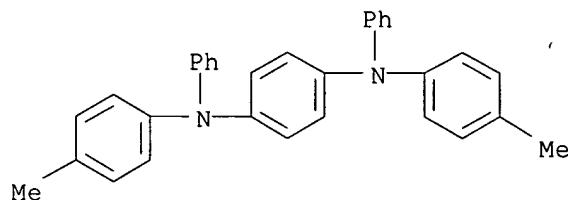
RN 306734-14-5 HCPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with  
1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 138171-14-9

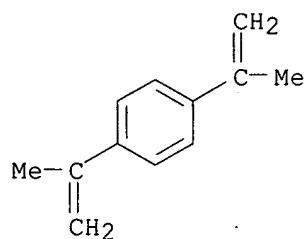
CMF C32 H28 N2



CM 2

CRN 1605-18-1

CMF C12 H14



## RETABLE

Referenced Author (RAU)	Year (R PY)	VOL (R VL)	PG (R PG)	Referenced Work (RWK)	Referenced File
Adachi, C	1989	55	1489	Appl Phys Lett	HCPLUS
Ambrose, J	1975	122	876	J Electrochem Soc	HCPLUS
Bellmann, E	1998	10	1668	Chem Mater	HCPLUS
Bellmann, E	1999	11	399	Chem Mater	HCPLUS
Bettenhausen, J	1997	82	4957	J Appl Phys	HCPLUS
Burroed, P	1994	65	2922	Appl Phys Lett	
Burroughes, J	1990	347	539	Nature	HCPLUS
Campton, R	1988	18	1431	J Appl Electrochem	
Hosokawa, C	1992	61	2503	Appl Phys Lett	HCPLUS
Kido, J	1996	7	31	Polym Adv Technol	HCPLUS
Kido, J	1995	267	1332	Science	HCPLUS

Kolb, E	1996	29	2359	Macromolecules	HCAPLUS
Liu, Y	1998	10	3301	Chem Mater	HCAPLUS
Louie, J	1997	119	11695	J Am Chem Soc	HCAPLUS
Naito, K	1993	97	6240	J Phys Chem	HCAPLUS
Nishiyama, M	1998	39	2367	Tetrahedron Letters	
Price, C	1959	3	1	Organic Reactions	
Son, J	1997	44	1307	IEEE Trans Electron	HCAPLUS
Tang, C	1994			US 5294869	HCAPLUS
Tang, C	1987	51	913	Appl Phys Lett	HCAPLUS
Thelakkat, M	1998	10	219	Adv Mater	HCAPLUS
Tokito, S	1997	44	1239	IEEE Trans Electron	HCAPLUS
Van der Auweraer, M	1993	97	8808	J Phys Chem	HCAPLUS
Wang, X				Macromol Chem Phys i	
Yang, Y	1996	79	1934	J Appl Phys	HCAPLUS

L104 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1999:815169 HCAPLUS

DN 132:23286

TI Conducting polymers for **semiconductor** devices

IN Sage, Ian Charles; Wood, Emma Louise; Feast, William James; Peace, Richard John

PA Secretary of State for Defence, UK

SO Brit. UK Pat. Appl., 24 pp.

CODEN: BAXXDU

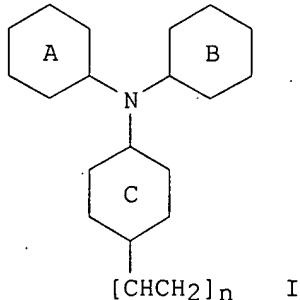
DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI GB 2334959	A	19990908	GB 1998-4822	19980305 <--
PRAI GB 1998-4822		19980305	<--	

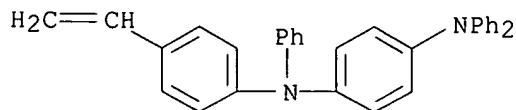
GI



AB Polymers of formula I are provided which are incorporated in organic compns. for use as elec. and electronically active materials used in **semiconductor** devices such as organic light emitting diodes and photorefractive devices, wherein A, B, and C are independently selected from Ph and C1-8 alkyl, C1-8 alkoxy, or C1-8 dialkylamino-substituted Ph, n = 3-10,000. Thus poly(4-vinyltriphenylamine) was prepared by acylation of triphenylamine with acetyl chloride to give 4-acetyltriphenylamine, followed by treating of 4-acetyltriphenylamine with triisopropoxy aluminum to give monomer 4-vinyltriphenylamine, then purifying and free radical polymerization of the monomer, showing number average mol. weight 5460, weight average mol. weight 9940, and

IC polydispersity index 1.82.  
 IC ICM C08F0026-02  
 CC 35-4 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 73, 76  
 ST polyvinyltriphenylamine conducting polymer prepn radical polymn;  
 semiconductor polyvinyltriphenylamine conducting polymer prepn  
 IT Conducting polymers  
     Electroluminescent devices  
     Luminescence  
     Luminescent substances  
     Photorefractive materials  
     Semiconductor devices  
       (preparation of conducting polymers for **semiconductor** devices)  
 IT Polymerization  
     (radical; preparation of conducting polymers for **semiconductor**  
     devices)  
 IT 1756-32-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
     (intermediate; preparation of conducting polymers for **semiconductor**  
     devices)  
 IT 25069-74-3P, 4-Vinyltriphenylamine  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
     (monomer; preparation of conducting polymers for **semiconductor**  
     devices)  
 IT 78099-29-3P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PRP  
 (Properties); PREP (Preparation); USES (Uses)  
     (preparation of conducting polymers for **semiconductor** devices)  
 IT 167893-11-0P 227176-03-6P 247132-45-2P 251932-67-9P 251932-69-1P  
 251932-71-5P 251932-73-7P 251932-75-9P 251932-77-1P  
 251932-79-3P 251932-81-7P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
     (preparation of conducting polymers for **semiconductor** devices)  
 IT 75-36-5, Acetyl chloride 603-34-9, Triphenylamine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
     (staring material; preparation of conducting polymers for  
     **semiconductor** devices)  
 IT 251932-73-7P 251932-75-9P 251932-81-7P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
     (preparation of conducting polymers for **semiconductor** devices)  
 RN 251932-73-7 HCPLUS  
 CN 1,4-Benzenediamine, N-(4-ethenylphenyl)-N,N',N'-triphenyl-, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

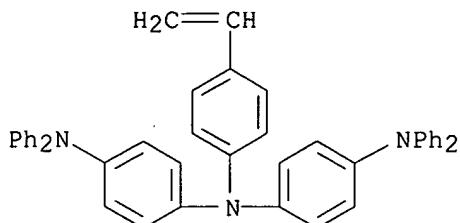
CRN 251932-72-6  
CMF C32 H26 N2

RN 251932-75-9 HCPLUS  
 CN 1,4-Benzenediamine, N-[4-(diphenylamino)phenyl]-N-(4-ethenylphenyl)-N',N'-

diphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 251932-74-8  
CMF C44 H35 N3

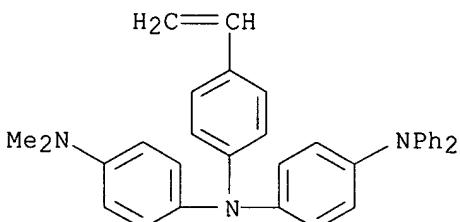


RN 251932-81-7 HCPLUS

CN 1,4-Benzenediamine, N-[4-(dimethylamino)phenyl]-N-(4-ethenylphenyl)-N',N'-diphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 251932-80-6  
CMF C34 H31 N3



L104 ANSWER 14 OF 15 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1998:758655 HCPLUS

DN 130:59045

TI Styryl-containing polymer, its manufacture, and organic electroluminescent device, electrophotographic photoreceptor, and hole-transporting material using it

IN Ueda, Hideaki; Kitahora, Takeshi; Nozaki, Takeshi

PA Minolta Camera Co., Ltd., Japan; Konica Minolta Holdings, Inc.

SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

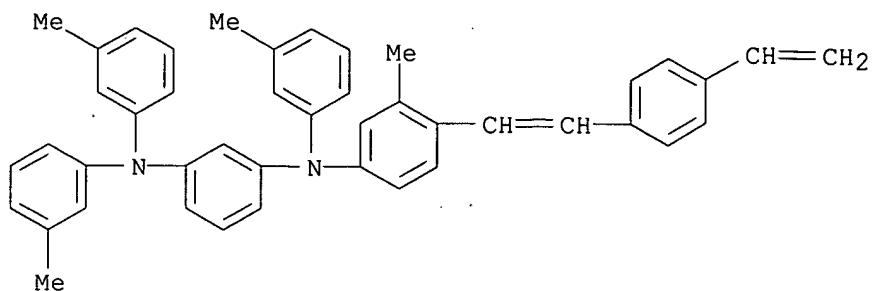
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10310606	A	19981124	JP 1997-119194	19970509 <--
	JP 3800720	B2	20060726		
	US 6066712	A	20000523	US 1998-74914	19980508 <--
PRAI	JP 1997-119192	A	19970509 <--		
	JP 1997-119194	A	19970509 <--		

AB The styryl-containing polymer is represented by [CH<sub>2</sub>CH(Ar<sub>1</sub>CH:CHAr<sub>2</sub>)]<sub>n</sub> (Ar<sub>1</sub> =

arylene; Ar2 = aryl, condensed polycyclic group, heterocyclic group; Ar1 and Ar2 may be substituted; n = natural number). The above polymer is manufactured by (1) the reaction between a P compound [CH2CH(Ar1CH2X)]n and an aldehyde compound Ar2CHO or (2) the reaction between an aldehyde compound [CH2CH(Ar1CHO)]n and a P compound Ar2CH2X [X = PO(OR1)2 or PR23.Y; R1 = lower alkyl; R2 = cycloalkyl, aryl; Y = halo]. The **electroluminescent** device contains the polymer in ≥1 organic compound thin layer including a light-emitting layer and the photoreceptor contains the polymer as a charge-transporting material. The hole-transporting material composed of the polymer is also claimed. The styryl-containing polymer shows good performance in charge-transporting and optical conductivity even after repeated use.

IC ICM C08F0008-00  
 ICS C08F0112-14; C08F0112-32; C09K0011-06; G03G0005-06  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 37, 38, 73  
 ST styryl polymer charge transport material; electrophotog photoreceptor  
 styryl polymer charge transport; **electroluminescent** device  
 styryl polymer optical cond; hole transport material styryl polymer  
 IT **Electroluminescent devices**  
 Electrophotographic photoconductors (photoreceptors)  
 (styryl-containing polymer as charge-transporting material for organic **electroluminescent** device and electrophotog. photoreceptor)  
 IT 217449-48-4P 217449-51-9P 217449-54-2P 217449-56-4P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (styryl-containing polymer as charge-transporting material for organic **electroluminescent** device and electrophotog. photoreceptor)  
 IT 184159-38-4 217449-58-6 217449-61-1 **217449-63-3**  
 217449-66-6 217449-69-9 217449-72-4 217449-74-6 217449-76-8  
 217449-78-0 217449-80-4 217449-82-6 217449-84-8 217449-86-0  
 217449-88-2 217449-90-6 217449-92-8 217449-94-0  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (styryl-containing polymer as charge-transporting material for organic **electroluminescent** device and electrophotog. photoreceptor)  
 IT 1086-00-6, 1-Chloromethylpyrene 30029-79-9 89115-21-9 145772-03-8  
 217449-95-1 217449-96-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (styryl-containing polymer as charge-transporting material for organic **electroluminescent** device and electrophotog. photoreceptor)  
 IT **217449-63-3**  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (styryl-containing polymer as charge-transporting material for organic **electroluminescent** device and electrophotog. photoreceptor)  
 RN 217449-63-3 HCPLUS  
 CN 1,3-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]-3-methylphenyl]-N,N',N'-tris(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1  
 CRN 217449-62-2  
 CMF C44 H40 N2



L104 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1996:746286 HCAPLUS

DN 126:39392

TI Organic thin-film **electroluminescent** device

IN Ito, Juichi; Sato, Hisaya; Hayashi, Takako

PA Toppan Printing Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08259935 JP 3646339	A B2	19961008 20050511	JP 1995-65611	19950324 <--
PRAI	JP 1995-65611		19950324 <--		
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

- AB An organic thin-film **electroluminescent** device, suited for use in optical displays, comprises a multilayer structure including an organic light-emitting layer and a hole injection/transport layer containing a compound represented by I ( G1 = CH or N; G2, G3 = H, C1-4 alkyl, alkoxy, dialkylamino, Q1, Q2, Q3, Q4, a group containing  $\geq 1$  benzene, naphthalene, anthracene, and perylene rings, benzene or naphthalene rings condensed with the Ph group in I; R = H, C1-4 alkyl, alkoxy, and dialkylamino).
- IC ICM C09K0011-06  
ICS H05B0033-14
- CC 73-11 (Optical, **Electron**, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 74, 76
- ST org thin film **electroluminescent** device; hole transport material  
org TFEL
- IT **Electroluminescent devices**  
(organic thin-film **electroluminescent** device)
- IT 184159-34-0 184159-36-2 184159-38-4  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(organic thin-film **electroluminescent** device)
- IT 184159-36-2

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
 (organic thin-film **electroluminescent** device)

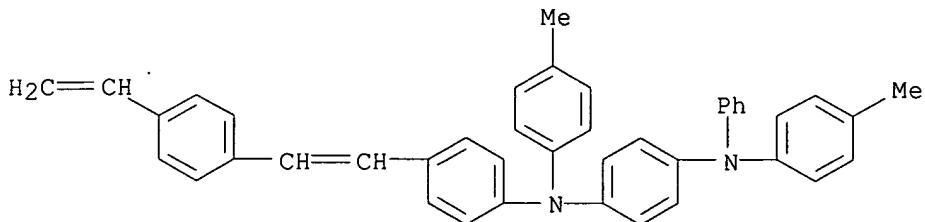
RN 184159-36-2 HCAPLUS

CN 1,4-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-N'-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 184159-35-1

CMF C42 H36 N2



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 E1 THROUGH E24 ASSIGNED

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 DICTIONARY FILE UPDATES: 25 MAR 2007 HIGHEST RN 928121-90-8

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TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> => d ide can tot

L105 ANSWER 1 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN

RN 863309-01-7 REGISTRY

ED Entered STN: 16 Sep 2005

CN Poly[[[(3,7-dimethyloctyl)oxy]methoxy-1,4-phenylene]-1,2-ethenediyl][[[(4-

(diphenylamino)phenyl]phenylamino]-1,4-phenylene]-1,2-ethenediyl] (9CI)  
 (CA INDEX NAME)

MF (C<sub>51</sub> H<sub>52</sub> N<sub>2</sub> O<sub>2</sub>)<sub>n</sub>

CI IDS, PMS, MAN

PCT Manual registration

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:256779

L105 ANSWER 2 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN

RN 863127-72-4 REGISTRY

ED Entered STN: 14 Sep 2005

CN Poly[[9,10-bis[4-[2-ethylhexyl]oxy]phenyl]-2,6-anthracenediyl]-1,2-ethenediyl[2-[4-(diphenylamino)phenyl]phenylamino]-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)

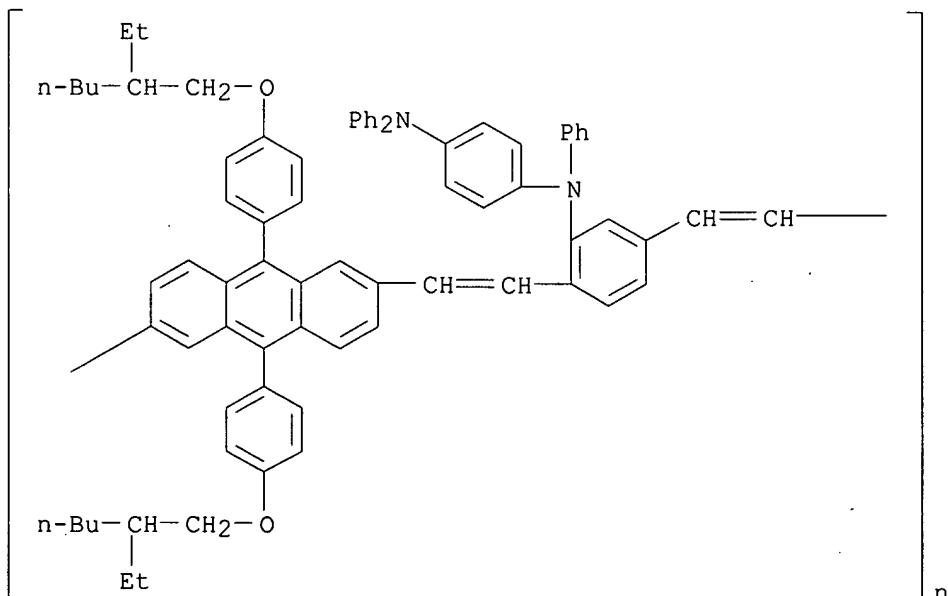
MF (C<sub>76</sub> H<sub>74</sub> N<sub>2</sub> O<sub>2</sub>)<sub>n</sub>

CI PMS

PCT Polyether, Polyether only

SR CA

LC STN Files: CA, CAPLUS, USPATFULL



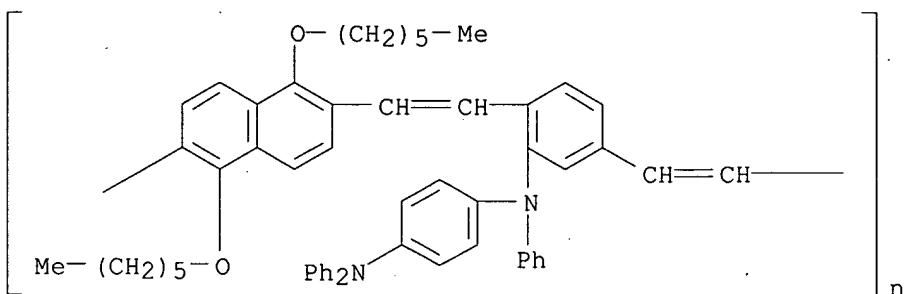
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:256779

L105 ANSWER 3 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 863127-71-3 REGISTRY  
 ED Entered STN: 14 Sep 2005  
 CN Poly[[1,5-bis(hexyloxy)-2,6-naphthalenediyl]-1,2-ethenediyl[2-[[4-(diphenylamino)phenyl]phenylamino]-1,4-phenylene]-1,2-ethenediyl] (9CI)  
 (CA INDEX NAME)  
 MF (C<sub>56</sub> H<sub>56</sub> N<sub>2</sub> O<sub>2</sub>)<sub>n</sub>  
 CI PMS  
 PCT Polyether, Polyether only  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

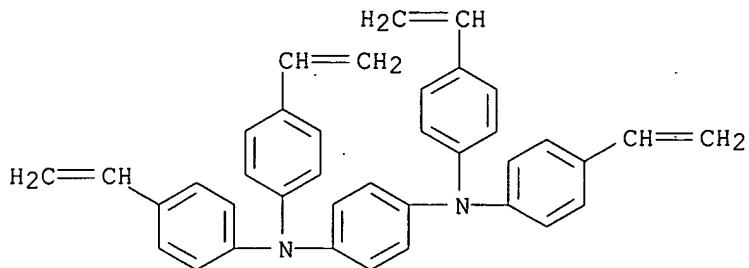
1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:256779

L105 ANSWER 4 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 835618-81-0 REGISTRY  
 ED Entered STN: 22 Feb 2005  
 CN 1,4-Benzenediamine, N,N,N',N'-tetrakis(4-ethenylphenyl)-, homopolymer  
 (9CI) (CA INDEX NAME)  
 MF (C<sub>38</sub> H<sub>32</sub> N<sub>2</sub>)<sub>x</sub>  
 CI PMS  
 PCT Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS

CM 1

CRN 835618-80-9  
 CMF C<sub>38</sub> H<sub>32</sub> N<sub>2</sub>



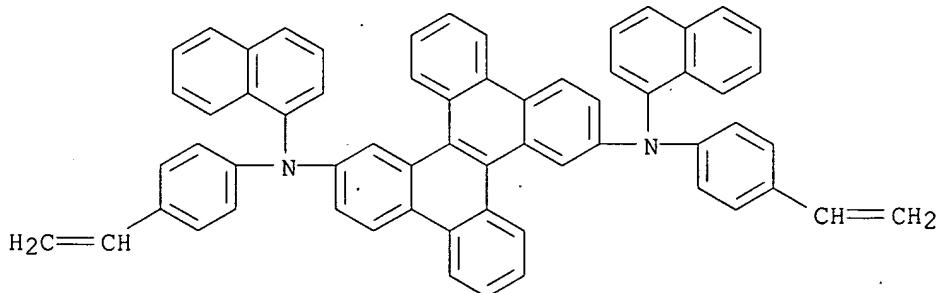
1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 142:177801

L105 ANSWER 5 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 697763-40-9 REGISTRY  
 ED Entered STN: 23 Jun 2004  
 CN Dibenzo[g,p]chrysene-2,10-diamine, N,N'-bis(4-ethenylphenyl)-N,N'-di-1-naphthalenyl-, homopolymer (9CI) (CA INDEX NAME)  
 MF (C<sub>62</sub> H<sub>42</sub> N<sub>2</sub>)<sub>x</sub>  
 CI PMS  
 PCT Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

CM 1

CRN 697763-39-6  
 CMF C<sub>62</sub> H<sub>42</sub> N<sub>2</sub>



1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:30834

L105 ANSWER 6 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 380643-48-1 REGISTRY  
 ED Entered STN: 07 Jan 2002  
 CN Poly[[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl][(decyloxy)methoxy-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)  
 MF (C<sub>51</sub> H<sub>52</sub> N<sub>2</sub> O<sub>2</sub>)<sub>n</sub>

CI IDS, PMS, MAN  
PCT Manual registration  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:45407

L105 ANSWER 7 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 380498-80-6 REGISTRY  
ED Entered STN: 04 Jan 2002  
CN Poly[[2,6-bis(octyloxy)-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)  
MF (C<sub>76</sub> H<sub>74</sub> N<sub>2</sub> O<sub>2</sub>)<sub>n</sub>  
CI PMS  
PCT Polyether, Polyether only  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

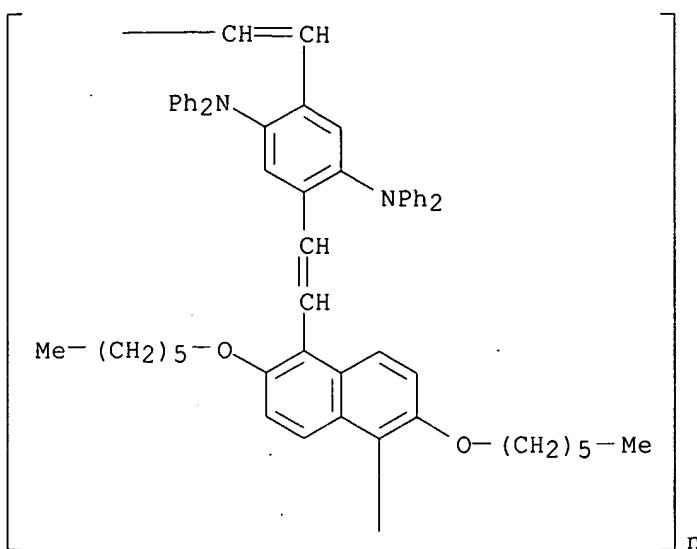
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 138:345750

REFERENCE 2: 136:45407

L105 ANSWER 8 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 380498-79-3 REGISTRY  
ED Entered STN: 04 Jan 2002  
CN Poly[[2,6-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)  
MF (C<sub>56</sub> H<sub>56</sub> N<sub>2</sub> O<sub>2</sub>)<sub>n</sub>  
CI PMS  
PCT Polyether, Polyether only  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

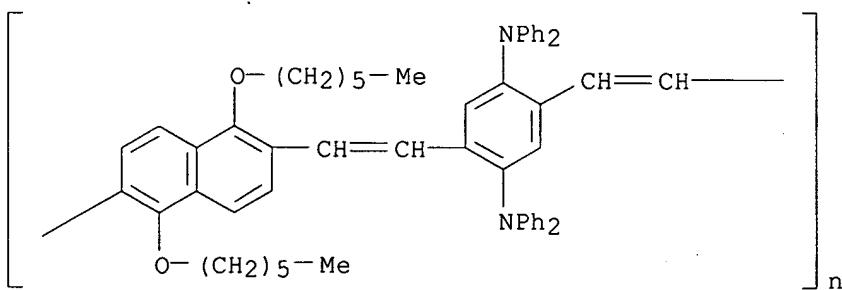


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:45407

L105 ANSWER 9 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 380498-78-2 REGISTRY  
 ED Entered STN: 04 Jan 2002  
 CN Poly[{1,5-bis(hexyloxy)-2,6-naphthalenediyl}-1,2-ethylenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethylenediyl] (9CI) (CA INDEX NAME)  
 MF (C<sub>56</sub> H<sub>56</sub> N<sub>2</sub> O<sub>2</sub>)<sub>n</sub>  
 CI PMS  
 PCT Polyether, Polyether only  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:45407

L105 ANSWER 10 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 369385-63-7 REGISTRY  
ED Entered STN: 13 Nov 2001  
CN Poly[[(2-ethylhexyl)-2,5-thiophenediyl]-1,2-ethenediyl[2,5-  
bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)  
MF (C46 H44 N2 S)n  
CI IDS, PMS, MAN  
PCT Manual registration  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

\*\*RELATED POLYMERS AVAILABLE WITH POLYLINK\*\*

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 138:345750

REFERENCE 2: 136:45407

REFERENCE 3: 135:336416

L105 ANSWER 11 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 369385-54-6 REGISTRY  
ED Entered STN: 13 Nov 2001  
CN Poly[[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl[[(3,7-  
dimethyloctyl)oxy]methoxy-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX  
NAME)  
MF (C51 H52 N2 O2)n  
CI IDS, PMS, MAN  
PCT Manual registration  
SR CA  
LC STN Files: CA, CAPLUS

\*\*RELATED POLYMERS AVAILABLE WITH POLYLINK\*\*

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

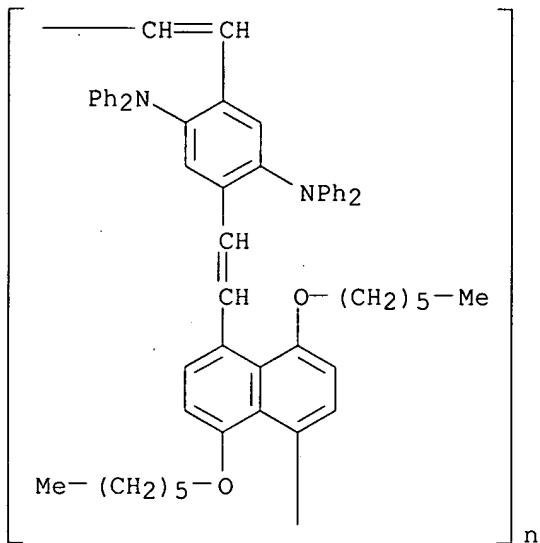
REFERENCE 1: 138:345750

REFERENCE 2: 135:336416

L105 ANSWER 12 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 369370-72-9 REGISTRY  
ED Entered STN: 13 Nov 2001  
CN Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-  
bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)  
MF (C56 H56 N2 O2)n  
CI PMS

PCT Polyether, Polyether only  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

\*\*RELATED POLYMERS AVAILABLE WITH POLYLINK\*\*



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
 3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 138:345750

REFERENCE 2: 136:45407

REFERENCE 3: 135:336416

L105 ANSWER 13 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN

RN 337465-19-7 REGISTRY

ED Entered STN: 23 May 2001

CN Poly[(4,4'-dihexyl[6,6'-biquinoline]-2,2'-diyl)-1,4-phenylene-1,2-ethenediyl(hexyl-2,6-naphthalenediyl)[2,6-bis(1,1-dimethylethyl)-9,10-anthracenediyl](hexyl-2,6-naphthalenediyl)-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

MF (C100 H106 N2)n

CI IDS, PMS, MAN

PCT Manual registration

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 134:346283

L105 ANSWER 14 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 337464-47-8 REGISTRY  
 ED Entered STN: 23 May 2001  
 CN Poly[[1,1',1'''-tris(2-ethylhexyl)-3,3',3'',4,4',4'''-tetrahexyl[2,2':5',2'''-  
     ter-1H-pyrrole]-5,5'''-diyl]-1,2-ethenediyl(hexyl-2,6-naphthalenediyl)[2,6-  
     bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl](hexyl-2,6-naphthalenediyl)-1,2-  
     ethenediyl] (9CI) (CA INDEX NAME)  
 MF (C138 H209 N3 O2)n  
 CI IDS, PMS, MAN  
 PCT Manual registration  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
     1 REFERENCES IN FILE CA (1907 TO DATE)  
     1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 134:346283.

L105 ANSWER 15 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 337464-46-7 REGISTRY  
 ED Entered STN: 23 May 2001  
 CN Poly[[1,1'-bis(2-ethylhexyl)[2,2'-bi-1H-pyrrole]-5,5'-diyl]-1,2-  
     ethenediyl(hexyl-2,6-naphthalenediyl)[2,6-bis(1,1-dimethylethyl)-9,10-  
     anthracenediyl](hexyl-2,6-naphthalenediyl)-1,2-ethenediyl] (9CI) (CA  
     INDEX NAME)  
 MF (C82 H102 N2)n  
 CI IDS, PMS, MAN  
 PCT Manual registration  
 SR CA  
 LC STN Files: CA; CAPLUS, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
     1 REFERENCES IN FILE CA (1907 TO DATE)  
     1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 134:346283

L105 ANSWER 16 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 337464-44-5 REGISTRY  
 ED Entered STN: 23 May 2001  
 CN Poly[[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl](hexyl-2,6-  
     naphthalenediyl)-1,2-ethenediyl[1,1'-biphenyl]-4,4'-diyl(cyano-1,2-  
     ethenediyl)[2,2',5,5'-tetrakis(hexyloxy)[1,1'-biphenyl]-4,4'-diyl](cyano-  
     1,2-ethenediyl)[1,1'-biphenyl]-4,4'-diyl-1,2-ethenediyl(hexyl-2,6-  
     naphthalenediyl)] (9CI) (CA INDEX NAME)  
 MF (C132 H154 N2 O6)n  
 CI IDS, PMS, MAN  
 PCT Manual registration  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
     1 REFERENCES IN FILE CA (1907 TO DATE)  
     1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 134:346283

L105 ANSWER 17 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN

RN 337464-32-1 REGISTRY  
 ED Entered STN: 23 May 2001  
 CN Poly[[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]-2,6-naphthalenediyl-  
   1,2-ethenediyl-1,4-phenylene(cyano-1,2-ethenediyl)-1,4-phenylene(cyano-1,2-  
   ethenediyl)-1,4-phenylene-1,2-ethenediyl-2,6-naphthalenediyl] (9CI) (CA  
   INDEX NAME)  
 MF (C78 H70 N2 O2)n  
 CI IDS, PMS, MAN  
 PCT Manual registration  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

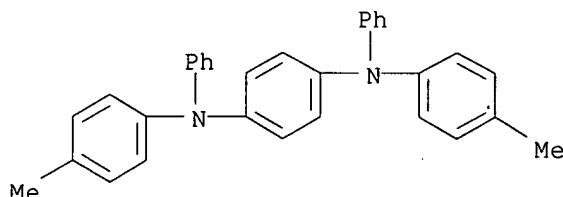
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 134:346283

L105 ANSWER 18 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 306734-14-5 REGISTRY  
 ED Entered STN: 05 Dec 2000  
 CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with  
   1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Benzene, 1,4-bis(1-methylethenyl)-, polymer with N,N'-bis(4-methylphenyl)-  
   N,N'-diphenyl-1,4-benzenediamine (9CI)  
 MF (C32 H28 N2 . C12 H14)x  
 CI PMS  
 PCT Polyether, Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS

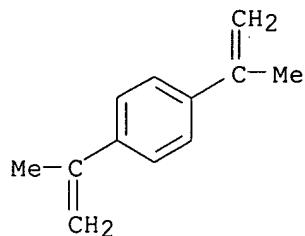
CM 1

CRN 138171-14-9  
CMF C32 H28 N2



CM 2

CRN 1605-18-1  
CMF C12 H14



4 REFERENCES IN FILE CA (1907 TO DATE)  
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 137:192418

REFERENCE 2: 135:378433

REFERENCE 3: 135:167478

REFERENCE 4: 133:350896

L105 ANSWER 19 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN

RN 306734-13-4 REGISTRY

ED Entered STN: 05 Dec 2000

CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-, polymer with 1,4-diethenylbenzene (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Benzene, 1,4-diethenyl-, polymer with N,N'-bis(4-methylphenyl)-N,N'-diphenyl-1,4-benzenediamine (9CI)

MF (C<sub>32</sub> H<sub>28</sub> N<sub>2</sub> . C<sub>10</sub> H<sub>10</sub>)<sub>x</sub>

CI PMS

PCT Polyether, Polystyrene

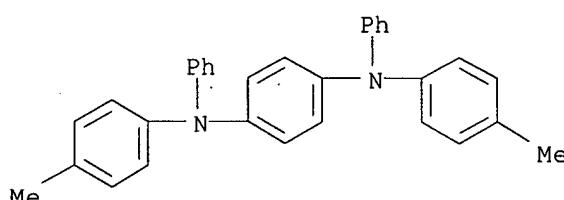
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 138171-14-9

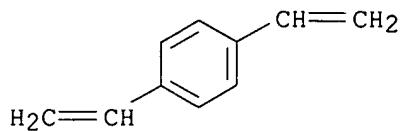
CMF C<sub>32</sub> H<sub>28</sub> N<sub>2</sub>



CM 2

CRN 105-06-6

CMF C<sub>10</sub> H<sub>10</sub>



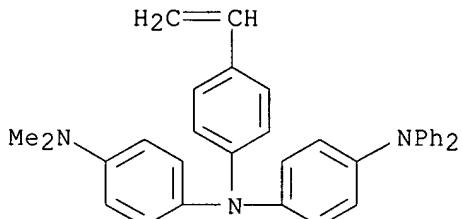
1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 133:350896

L105 ANSWER 20 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 251932-81-7 REGISTRY  
 ED Entered STN: 28 Dec 1999  
 CN 1,4-Benzenediamine, N-[4-(dimethylamino)phenyl]-N-(4-ethenylphenyl)-N',N'-diphenyl-, homopolymer (9CI) (CA INDEX NAME)  
 MF (C34 H31 N3)x  
 CI PMS  
 PCT Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS

CM 1

CRN 251932-80-6  
 CMF C34 H31 N3



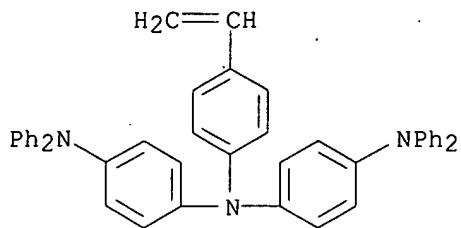
1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 132:23286

L105 ANSWER 21 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 251932-75-9 REGISTRY  
 ED Entered STN: 28 Dec 1999  
 CN 1,4-Benzenediamine, N-[4-(diphenylamino)phenyl]-N-(4-ethenylphenyl)-N',N'-diphenyl-, homopolymer (9CI) (CA INDEX NAME)  
 MF (C44 H35 N3)x  
 CI PMS  
 PCT Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

CM 1

CRN 251932-74-8  
 CMF C44 H35 N3



2 REFERENCES IN FILE CA (1907 TO DATE)  
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

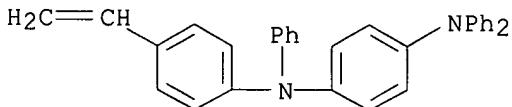
REFERENCE 1: 134:12417

REFERENCE 2: 132:23286

L105 ANSWER 22 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 251932-73-7 REGISTRY  
 ED Entered STN: 28 Dec 1999  
 CN 1,4-Benzenediamine, N-(4-ethenylphenyl)-N',N'-triphenyl-, homopolymer  
 (9CI) (CA INDEX NAME)  
 MF (C32 H26 N2)x  
 CI PMS  
 PCT Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

CM 1

CRN 251932-72-6  
 CMF C32 H26 N2



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:386018

REFERENCE 2: 145:200370

REFERENCE 3: 134:12417

REFERENCE 4: 132:23286

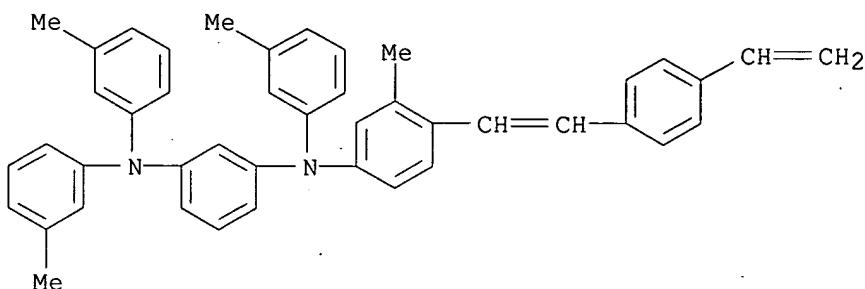
L105 ANSWER 23 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN

RN 217449-63-3 REGISTRY  
 ED Entered STN: 20 Jan 1999  
 CN 1,3-Benzenediamine, N-[4-[(E)-2-phenylprop-1-enyl]phenyl]-3-methylphenyl-

N,N',N'-tris(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)  
 MF (C<sub>44</sub> H<sub>40</sub> N<sub>2</sub>)<sub>x</sub>  
 CI PMS  
 PCT Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

CM 1

CRN 217449-62-2  
 CMF C<sub>44</sub> H<sub>40</sub> N<sub>2</sub>



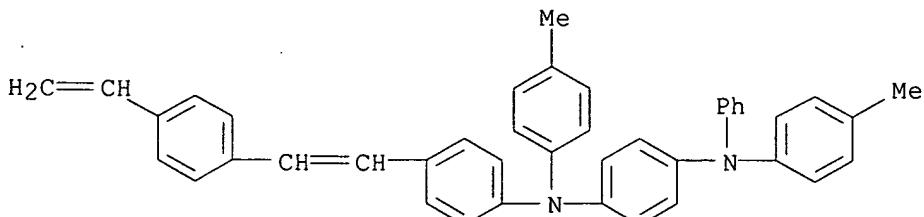
1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 130:59045

L105 ANSWER 24 OF 24 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 184159-36-2 REGISTRY  
 ED Entered STN: 19 Dec 1996  
 CN 1,4-Benzenediamine, N-[4-{2-(4-ethenylphenyl)ethenyl}phenyl]-N,N'-bis(4-methylphenyl)-N'-phenyl-, homopolymer (9CI) (CA INDEX NAME)  
 MF (C<sub>42</sub> H<sub>36</sub> N<sub>2</sub>)<sub>x</sub>  
 CI PMS  
 PCT Polystyrene  
 SR CA  
 LC STN Files: CA, CAPLUS

CM 1

CRN 184159-35-1  
 CMF C<sub>42</sub> H<sub>36</sub> N<sub>2</sub>



1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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